SRI SARADA COLLEGE FOR WOMEN (AUTONOMOUS)

SALEM – 16

Reaccredited with "B++" Grade by NAAC

(Affiliated to Periyar University)

TANSCHE Syllabus

DEPARTMENT OF HOME SCIENCE

(For the academic year 2024 – 27)

Programme	**B.Sc. Home Science**
Code	
Duration	**3 years [UG] On successful completion of the programme, the student:**
Program -me Outcomes	**PO1: Disciplinary Knowledge and Skills** **Demonstrates theoretical and practical knowledge and understanding in subjects related to Food Science and Nutrition/ Textiles and Clothing/ Resource Management/ Extension and Communication/Human Developmentand Family Studies**
	PO2: Effective Communicator **Is capable of effective communication of subject specific scientific informationthrough oral and written formats using ICT wherever necessary. Explores communication skill set to engage key stakeholders such as the family and community.**
	PO3: Critical thinking, Analytical reasoning and problem solving **Applies disciplinary knowledge, understanding and transferable skills to thegiven context. Is capable of identifying and analysing problems and issues and seek solutions to real-life problems**
	PO4: Research and Scientific Reasoning **Demonstrates skills in research through collection of relevant qualitative andquantitative data, analysis and interpretation of data using appropriate methodologies for formulating evidence based solutions and arguments**
	PO5: Co-operation/ Team Work **Is capable of contributing significantly and working enthusiasticallyboth independently and in a group**

	PO6: Digital Literacy Demonstrates competency in accessing relevant and authentic information and data from electronic media with a motive to learn and synthesize information for academic and extension work presentation; prepare computer aided designs and use specific software
	PO7: Multicultural competence Recognizes and assesses societal, environmental and cultural issues related to area of study within the local and global context
	PO8: Moral and Ethical awareness/reasoning: Displays moral responsibility and values; Has a professional approach, is objective, unbiased and truthful in all aspects of work and refrains from unethical practices such as plagiarism , fabrication, falsification, misinterpretation of the data and breaching intellectual property rights
	PO9: Leadership readiness/qualities Possesses leadership skills, takes initiative, mobilizes resources has the capacity to lead community based projects and initiatives successfully
	PO10: Lifelong learning Is capable of staying motivated to be updated consistently with content, concepts, theories, specializations, fields, technologies, books and avenues to meet professional and personal needs at any given instant.

Programme Specific Outcomes	
On successful completion of the programme, the student:	
PSO1	Acquires fundamental knowledge in the core areas of Home Science.
PSO2	Develops competency in the application of knowledge in different settings such as family and community.
PSO3	Displays skills in oral and written communication for effective dissemination of knowledge gained in a particular field of Home Science to benefit society and mankind.
PSO4	Acquires skills that create professionals in different fields related to Home Science.
PSO5	Can pursue higher education, research, teaching, entrepreneurship or render service in the government, public or corporate sector.

Highlights of the Revamped Curriculum

- The curriculum focusses on meeting the demands of the Food and Hospitality industries, Healthcare, Child care, Textiles, Home and Office interiors, and Social Welfare sectors.
- This student centric programme ensures knowledge and skill development by providing hands on training, on-the-job internships, projects, lab practices, experiential activities, exposure to entrepreneurial skills and training for competitive examinations.
- The course content is comparable to world class curriculum.
- The courses are updated to include recent developments in the field of Home Science.
- References are updated and web resources are cited.
- Each course in the curriculum carries either a practical/activity or experiential learning component to ensure skill development along with acquiring knowledge in the subject.
- Potential for employability has been enhanced through mandatory internships.
- Digital literacy and competency is ensured using ICT enabled learning environment.

TEACHING METHODOLOGIES

Teaching methods : Chalk and Board, Experiential learning, Student centric learning and Small projects and Practical assignments; Virtual Classroom, LCD projector, Smart Class, Video Conference and Guest Lectures by eminent people.

Training students to engage in self-study without relying on faculty (for example – library and internet search, manual and handbook usage, etc.)

Library, Net Surfing, Manuals, NPTEL, Naan Mudhalvan Courses Other university websites

SRI SARADA COLLEGE FOR WOMEN (AUTONOMOUS), SALEM-16

DEPARTMENT OF HOME SCIENCE

B.Sc. HOME SCIENCE
PROGRAMME STRUCTURE UNDER CBCS
(For the students admitted in 2024-25 onwards)
Total Credits: 140+ Extra Credits (Maximum 28)
SEMESTER-I

Part	Course	Course Title	Code	Hrs. / Week	Credits
I	Language – I	Tamil/Hindi/Sanskrit –I	24ULTC1/ 24ULHC1/ 24ULSC1	6	3
II	English –I	English – I	24ULEC1	6	3
III	Core Course – I	Food Science	24UHSCC1	5	5
III	Core Course – II	Basic Cookery Practical	24UHSCCQ1	4	3
III	Elective- I (GE)	Chemistry – I	24UHSCGEC1	3	3
III	Elective- I (GE)	Chemistry Practical – I	24UHSCGECQ1	2	2
IV	Skill Enhancement Course-I	Food Product Development	24UHSSEC1	2	2
V	Foundation Course	Perspective In Home Science	24UHSSEFC	2	2
VI	**Total**			**30**	**23**
	Articulation and Idea Fixation Skills				
	Physical Fitness Practice – 35 hours per Semester				
	Advanced Diploma in Food ServiceManagement Level -1: Certificate Course 100 hours per year				

SEMESTER - II

Part	Courses	Course Title	Paper Code	No. of Hours	Credit
I	Language	Tamil / Hindi / Sanskrit- II	24ULTC2/ 24ULHC2/ 24ULSC2	6	3
II	English	General English – II	24ULEC2	6	3
III	Core Course – III	Human Physiology	24UHSCC2	5	4
	Core Course – IV	Principles of ResourceManagement	24UHSCC3	4	4
	Elective- II(GE)	Chemistry – II	24UHSCGEC2	3	3
	Elective- II(GE)	Chemistry Practical – II	24UHSCGECQ2	2	2
IV	Skill Enhancement Course II- (NME)Indian Knowledge System	Indian Health Sciences	24UHSSEC2	2	2
	Skill Enhancement Course – III	Bakery (Practical)	24UHSSECQ3	2	2
			Total	**30**	**23**
V	Articulation and Idea Fixation Skills				
	Physical Fitness Practice 35 Hours per Semester				
	Advanced Diploma in Food Service Management Level-I: Certificate course 100 Hoursper Year				
	Extra credits are given for extra skills and courses qualified in MOOC / NPTEL				

SEMESTER - III

Part	Courses	Course Title	Paper Code	No. of Hours	Credits
I	Language	Tamil -III Hindi - III Sanskrit-III	24ULTC3/ 24ULHC3/ 24ULSC3	6	3
II	English	General English – III	24ULEC3	6	3
III	Core Course – V	Human Nutrition	24UHSCC4	5	5
	Core Course -VI	Nutrition Practical	24UHSCCQ2	4	3
	Elective Course – III (Discipline specific)	Introduction to Fashion Designing	24UHSDSEC1	5	5
IV	Skill Enhancement Course IV	Consumer Education (Entrepreneurial Skill)	24UHSSEC4	1	1
	Skill Enhancement Course – V	Fundamentals of Research in Nutritional Sciences	24UHSSEC5	2	2
		Environmental studies	24UEVSC	1	-
			Total	**30**	**22**
V	**Articulation and Idea Fixation Skills**				
	Physical Fitness Practice 35 Hours per Semester				
	Advanced Diploma in Food Service Management Level-II : Diploma course 100 Hours per Year				
	Extra credits are given for extra skills and courses qualified in MOOC / NPTEL				

SEMESTER - IV

Part	Courses	Course Title	Paper Code	No. of Hours	Credits
I	Language	Tamil -III Hindi - III Sanskrit-III	24ULTC4/ 24ULHC4/ 24ULSC4	6	3
II	English	General English – III	24ULEC4	6	3
III	Core Course – VI	Nutrition through Life Cycle	24UHSCC5	4	4
	Core Course -VII	Human Development	24UHSCC6	4	4
	Elective Course – IV (Discipline specific)	Concepts in Apparel Designing (Theory)	24UHSDSEC2	3	3
		Basics of Garment Construction (Practical)	24UHSDSECQ	2	2
IV	Skill Enhancement Course VI	Women Health and Wellness	24UHSSEC6	2	2
	Skill Enhancement Course – VII	Computer Applications in Home Science	24UHSSEC7	2	2
		Environmental studies	24UEVSC	1	2
			Total	**30**	**25**
V	**Articulation and Idea Fixation Skills**				
	Physical Fitness Practice 35 Hours per Semester				
	Advanced Diploma in Food Service Management Level-II : Diploma course 100 Hours per Year				
	Extra credits are given for extra skills and courses qualified in MOOC / NPTEL				

B.Sc. Home Science-Nutrition, Food Service Management and Dietetics/Clinical Nutrition/ Clinical Nutrition and Dietetics/Foods and Nutrition/Food Science and Nutrition/Interior Design and Decor

S.No.	Contents	SEM
	List of Mandatory Courses/ Core Courses/Allied Courses*	
1.	Food Science	I
2.	Basic Cookery Practical	I
3.	Human Physiology-Theory and Practical	II
4.	Basics of Food Microbiology -Theory and Practical	II
5.	Human Nutrition	III
6.	Nutrition Practical	III
7.	Nutritional Biochemistry-Theory and Practical	IV
8.	Human Development	IV
9.	Nutrition through the life cycle-Theory and Practical	IV
10.	Public Health Nutrition	V
11.	Nutrition Education and Communication	V
12.	Fibre to Fabric	V
13.	Food Preservation-Theory and Practical	VI
14.	Food Safety and Quality control	VI
15.	Foundations of Entrepreneurship	V/VI
16.	Quantity Food Production and Service-Theory and Practical	V
17.	Dietetics	V/VI
18.	Dietetics Practical	V/VI
19.	Food Service Management	VI
20.	Sports Nutrition	VI
21.	Functional foods for Chronic Disease	VI
22.	Principles of Resource Management	II/III
23.	Interior Decoration	II/III
24.	Clinical Nutrition- Theory and Practical	VI
25.	*Allied Chemistry offered by Chemistry Department is mandatory	
	List of Elective/Non-Major Elective**/ Skill Enhancement Optional Courses**	
1.	House Keeping	
2.	Food Product Development	
3.	Consumer Education	
4.	Life skill Strategies and Techniques	
5.	Landscape Design and Ornamental Gardening	
6.	Concepts in Apparel Designing	
7.	Introduction to Fashion Designing	
8.	Fundamentals of Art and Design	
9.	Women's Health and Wellness	
10.	Fundamentals of Research in Nutritional Sciences	
11.	Family Dynamics	
12.	Foundations of Baking and Confectionery	
13.	Changing trends in Extension Education	
14.	Front office Management	
15.	Nutritional Assessment and Diet Counselling	
16.	Pre-School and Crèche Management	
	**The elective courses listed above can also be considered for Skill Enhancement or Non-Major Elective and the credits and hours can be reduced accordingly.	

	Internship – Internship in Hospitals / Food industry / Catering establishment / Health care facility/Fitness centre/ NGO	
	List of Compulsory Skill Enhancement Courses to be offered	
1.	Computer Applications in Home Science SC7	IV
2.	Aptitude and Reasoning skills for Competitive Examinations SC8	VI

Title of the Course		FOOD SCIENCE								
Category Core	Year - I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-I									
Code	24UHSCC1	Y	Y			5	5	30	70	100

Learning Objectives
To enable the students to:
Understand the science of food and factors that affect its quality, Nutritive value and shelf life.
Understand the physical, biological and chemical characteristics of various foods and their uses.
Apply knowledge of foods in planning diets and preparing meals that are safe, nutritious and palatable.

UNIT	CONTENT	HOURS
UNIT I	**Nutrient content of foods and Cooking Methods -** Classification of foods according to nutrient content. Food groups for balanced diets. Study of the different cooking methods- dry heat, moist and combination methods, solar cooking, microwave cooking - merits and demerits, dishes prepared by these methods.	10
UNIT II	**Cereals**, **Millets**, **Pulses, Legumes and Nuts -** Classification of Cereals, Structure, nutrient composition, storage, processing, milling, parboiling, scientific methods of preparation and cooking, acceptability and palatability of rice, wheat, maize and millets Cooking of starches- Dextrinization and gelatinization, retrogradation and resistant starch. **Pulses and legumes** - Types, nutritive value, methods of cooking, effect of soaking and germination, judicious combination of cereals and pulses- complementary effect, soya beans, fava beans and kesari dhal- methods to inactivate /remove toxins; storage. **Nuts -** types, composition, market forms, roasting, steaming of nuts, nuts butters; uses in sweets, baking, and confectionery; Storage. **Oilseeds** - types, methods of processing, uses and shelf life	10
UNIT III	**Vegetables and Fruits** **Vegetables:** Classification, nutritive value, effect of cooking on colour, texture, flavour, appearance and nutritive value, Purchase - storage and preservation **Fruits:** Classification, nutritive value, changes during ripening, enzymatic browning, uses, preservation.	10

UNIT IV	**Flesh foods, Eggs, and Milk** **Meats** – structure, nutritive value, selection of meat, postmortem changes in meat, ageing, factors affecting tenderness of meat, methods of cooking and storage. **Poultry**-types, nutritive value, selection and cooking **Fish** - classification, nutritive value, selection, storage, cooking and preservation.	**15**
	Eggs Structure, nutritive value, methods of cooking, storage, preservation and uses in cookery; foam formation and factors affecting foam. formation **Milk and milk products** Nutritive value, kinds of milk, pasteurization, and homogenization, coagulation of milk, fermentation of milk; milk products - whole and skimmed milk, milk powders and yogurt, ghee, butter, cheese. Storage and preservation.	
UNIT V	**Fats and oils, sugars, food adjuncts and beverages Fats and Oils**: Types, sources-animal fats and vegetable fats, functions, processing-difference between cold pressed and regular cooking oils, hydrogenated fat, emulsification, rancidity, smoking point. Factors affecting absorption of oils while frying foods, harmful effects of reheated oils. **Sugars:** Types and market forms of sugars; stages of sugar cookery, crystallization, factors affecting crystallization, uses in confectionery. **Food adjuncts and food additives** Spices and condiments: classification, source, use in food preparation, Leavening agents, stabilizers, thickeners, anticaking agents, enzymes, shortenings, stabilizers, flavouring agents, colouring agents, sweeteners-use and abuse. **Food adulteration** Definition, common adulterants in food **Beverages** Classification-fruit based beverages; milk-based beverages nutritive. value and uses, alcoholic beverages, coffee, tea and cocoa, malted. beverages. Sources, manufacture, processing, and service; methods of preparation of coffee and tea.	**15**
	PRACTICAL 1. Cereal and Pulse - Experimental Cookery, gelatinization, Dextrinisation 2. Vegetable and Fruit - Experimental Cookery, enzymatic browning. 3. Meat, Egg and Milk- Experimental Cookery; whipping quality of eggs 4. Study of the smoking temperature of Fats 5. Stages of Sugar cookery, factors affecting crystallization 6. Preparation of coffee and tea by different methods. 7. Preparation of one dish each applying the different cooking methods	**15**
	TOTAL	**70**

ACTIVITY

- A survey of processed forms of cereals, pulses, dairy/meat products available in the market Comparison of convenience foods and natural/whole foods
- Market survey of processed beverages
- Identify common adulterants in foods

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Identify foods based on food groups and list their uses - K1.

CO2. Describe classification, nutritive value, storage and preservation of foods - K2.

CO3.Explain changes in food due to cooking, processing and factors that affect palatability, acceptability, and nutritive value – K3.

CO4. Compare different methods of cooking and select the methods best suited for cooking different Foods - K4.

CO5. Justify the selection, processing, storage, and cooking methods to preserve nutritive values of various foods and make them safe and acceptable – K5.

References:

1. Manay, S. and Shadaksharaswamy, M. (1987) Foods Facts and Principles. New Age International Publishers, New Delhi.
2. Peckham, G.C. and Freeland-Graves, J.H. (1979) Foundations of Food Preparation, 4th edition, Macmillan Publishing Co. Inc., New York**.**
3. Shewfelt R.L. (2015) Introducing Food Science. CRC Press, Taylor and Francis Group. Boca Raton
4. Srilakshmi B (2019) Food Science, (7^{th} Ed.) New Age International Publishers
5. Thangam E.Philip, Modern Cookery for Teaching and the Trade Volume - 1&2 (6th Revised Edition), Orient Black
6. Vaclavik, V.A. and Elizabeth, W.C. (2013) Essentials of Food Science.2^{nd} ed. Springer Publication, New Delhi

e-Learning resources

- https://ia801408.us.archive.org/20/items/textbookoffoodsc0000khad/textbookoffoodsc0000khad.pdf
- https://egyankosh.ac.in/handle/123456789/32947
  https://unacademy.com/content/kerala-psc/study-material/basic-food-science/

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	1	3	2	3	2	2	3
CO2	3	3	3	1	3	2	3	2	2	S
CO3	3	3	3	1	3	2	3	2	2	3
CO4	3	3	3	1	3	2	3	2	2	3
CO5	3	3	3	1	3	2	3	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	2	3	3
CO2	3	3	2	3	3
CO3	3	3	2	3	3
CO4	3	3	2	3	3
CO5	3	2	2	3	3
Weightage	15	14	10	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	2	3	3

Strong 3 Medium 2 Low 1

Title of the Course		BASIC COOKERY PRACTICAL								
Category Core	Year-I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-I									
Code	24UHSCCQ1			Y		3	4	40	60	100

Learning Objectives
To enable the students to :
Learn the principles and scientific methods of cooking
Learn the best methods of cooking foods to preserve its nutrient content and minimize cooking time.
Apply the principles of cookery to prepare tasty and nutritious food

UNIT	CONTENT	HOURS
UNIT I	**Introduction to Basic Cooking Skills** Introduction to different cooking methods, cooking terminology; equipment and techniques used for pre-preparation and for different cooking methods. Methods of measuring and weighing liquids and dry ingredients. The use and care of simple kitchen equipment. Introduction to food safety, sanitation and hygiene in the kitchen, Safe practices in handling knives, sharp instruments and materials at high temperature.	10
UNIT II	**Cereals, Millets and pulses** **Cereals and Millets:** Methods of combining fine and course cereal with Liquid (eg. Ragi porridge, rava upma) Method of cooking cereals and factors influencing texture and nutritive value- cooking rice by boiling and straining, absorption method, steaming, pressure cooking, microwave cooking; Gelatinization and dextrinization Preparation of recipes using rice-puttu, dosai, idli/ idiappam, lemon rice, curd rice, coconut rice, fried rice, tamarind rice, tomato rice, mint pulao- a few Wheat and Millet preparations - Kesari, Phulka, poori, paratha, naan, ragi adai, samai curd rice, thinai uppuma, -a few **Pulses:** Factors influencing texture, digestibility and nutritive value of whole gram/legumes andpulses -soaking, addition of soda bicarbonate, addition of salt, water quality- hard and softwater, pressure cooking, boiling and straining. Pulse preparations- Sundal, sambhar, sprouted green gram patchadi, Vadai, pongal, ompodi, green gram payasam, masala vadai ,medhu vadai-a few	15

UNIT III	**Vegetables and Fruits** **Vegetables:** Basic cuts of vegetables-Slice and mince (onions) Shred (cabbage, spinach),dice (carrot), chop (tomato), grating (beetroot),and their uses in dishes. Changes in colour and texture of vegetables and nutritive value due to different methods of cooking, cooking medium and addition of acid/alkali. Vegetable preparations – Poriyal, Aloo methi curry, vegetable cutlet, thoran, vegetable kurma, avial, keerai masiyal, vegetable salad, vegetable soup, vegetable sandwich, kootu, mint chutney and carrothalwa. **Fruits:** Enzymatic browning in fruits and methods to prevent it. Fruit preparations- stewed apple, banana fritters, fruit salad, fruit punch, fruit yoghurt andfruit smoothie, preserve/jam.	**15**
UNIT IV	**Eggs,milk and milk products ,meat and fish:** **Egg Cookery:** Boiling of eggs-hard and soft boiled eggs. Best method of boiling eggs. Prevention of Ferrous sulphide formation on the yolk. Poaching and frying. Coagulation of egg protein-stirred and baked custard Egg preparations - egg curry, omelet, French toast, caramel custard (steamed), scrambled eggs and fried eggs- a few Factors affecting whipping quality of egg white – effect of salt, sugar, vinegar, fatand milk, type of container used and beaters, Stages of foam formation in whipped egg whites and their uses in cookery. **Milk and milk products** Curdling of milk using lime juice, butter milk, tomato juice, **Milk preparations** Cream of tomato soup, paneer masala, payasam, patchadi, thayir vadai, morkulumbu, basundhi, lassi, spiced buttermilk and baked macaroni and cheese. **Meat and Fish** Methods of tenderizing meat-Pounding, mincing addition of acids like curd/limejuice in marinade, addition of proteolytic enzymes-raw papaya Effect of different methods of cooking on flavour, texture and appearance of meatand fish. Meat preparations - mutton ball curry, mutton vindaloo, mutton keema, liver fry,chicken spring roll, chicken sweet corn soup, chicken biriyani. Sea food preparations- fish fry, fish moilee, fish cutlet, sweet and sour prawns.	**15**

UNIT V	**Sugar cookery, Fats and oils food additives and raising agents** **Sugar Cookery** - Stages of sugar cookery and uses. Preparations of sweets using different stages of sugar cookery **Fats and oils** - Effect of temperature of oil on texture and palatability of foods- Frying pooris at different temperatures Smoking point of oil - bread cube test. Emulsions- definition, Preparation of mayonnaise **Food additives and Raising agents** Role of MSG, sodium benzoate and KMS in food preparation and preservation, Natural versus synthetic preservatives, -Advantages and limitations Use of baking soda, baking powder, yeast in baking and food preparation- Prepare one dish with each of these Uses of herbs and spices to enhance flavour.	**10**
	TOTAL	**60**

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Identify appropriate methods for weighing dry and wet food ingredients and for cooking different foods -K1.

CO2. Select suitable methods for cooking cereals, pulses, vegetables, meat, fish and Poultry – K2.

CO3. Apply the principles of cookery, cooking techniques and suitableingredients in preparing dishes -K3.

CO4. Explain the reasons behind the changes that occur during food preparation -K4.

CO5. Justify the best preparation and cooking methods for acceptability and retention ofnutrients in different dishes -K5.

References:

1. Martland, R.E. and Welsby, D.A. (1980) Basic Cookery, Fundamental Recipes and Variations. William Heinemann Ltd., London.
2. Krishna Arora (2008) Theory of cookery, Frank Brothers & Co.,
3. Negi J (2013) Fundamentals of Culinary Art, S.Chand and Co.
4. Peckham,G .C .and Freeland- Graves,J.H. (1987) Foundation of food preparation.4th ed. Macmillan Publishing co, New York
5. Penfield MP and Ada Marie C (2012), Experimental Food Science, Academic Press,,SanDiego

e-Learning Resources:

- https://www.ihmnotes.in/assets/Docs/Books/Theory_of_Cookery.pdf
- http://staffnew.uny.ac.id/upload/132318572/pendidikan/buku-esp.pdf

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	3	2	3	1	1	3	3	3
CO2	3	1	3	3	3	2	3	3	2	3
CO3	3	2	3	3	3	2	3	2	2	3
CO4	3	3	3	3	3	2	3	2	2	3
CO5	3	3	3	3	3	1	3	3	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	1	3	3
CO2	3	3	1	3	3
CO3	3	3	1	3	3
CO4	3	3	2	3	3
CO5	3	3	1	3	3
Weightage	15	15	6	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	1	3	3

Strong 3 Medium 2 Low 1

<table>
<tr><td>Title of the Course</td><td colspan="7">CHEMISTRY
(FOR HOME SCIENCE)</td></tr>
<tr><td>Paper No.</td><td colspan="7">Elective -I(GE)</td></tr>
<tr><td rowspan="2">Category</td><td rowspan="2">Generic Elective</td><td>Year</td><td>I</td><td rowspan="2">Credits</td><td rowspan="2">3</td><td rowspan="2">Course Code</td><td rowspan="2">24UHSCGEC1</td></tr>
<tr><td>Semester</td><td>I</td></tr>
<tr><td rowspan="2">Instructional hours per week</td><td>Lecture</td><td>Tutorial</td><td colspan="3">Lab Practice</td><td colspan="2">Total</td></tr>
<tr><td>3</td><td>-</td><td colspan="3">-</td><td colspan="2">3</td></tr>
<tr><td>Prerequisites</td><td colspan="7">Higher secondary chemistry</td></tr>
<tr><td>Objectives of the course</td><td colspan="7">This course aims at providing knowledge on
• basics of atomic orbitals, chemical bonds, hybridization and fundamentals of organic chemistry
• concepts of nuclear chemistry and industrial chemistry
• importance of specialty drugs and artificial sweeteners
• separation and purification techniques.</td></tr>
<tr><td>Course Outline</td><td colspan="7">UNIT I 15 Hours
Chemical Bonding and Nuclear Chemistry
Chemical Bonding: Molecular Orbital Theory-bonding, antibonding and non-bonding orbitals. MO diagrams for Hydrogen, Helium, Nitrogen; discussion of bond order and magnetic properties.
Nuclear Chemistry: Fundamental particles - Isotopes, Isobars, Isotones and Isomers-Differences between chemical reactions and nuclear reactions- group displacement law. Nuclear binding energy - mass defect - calculations. Nuclear fission and nuclear fusion - differences – Stellar energy. Applications of radioisotopes – carbon dating, rock dating and medicinal applications.

UNIT II 15 Hours
Industrial Chemistry
Fuels: Fuel gases: natural gas, water gas, semi water gas, carbureted water gas, producer gas, CNG, LPG and oil gas (manufacturing details not required).
Silicones: Synthesis, properties and uses of silicones.
Fertilizers: Urea, ammonium sulphate, potassium nitrate, NPK fertilizer, superphosphate, triple superphosphate.

UNIT III 15 Hours
Fundamental Concepts in Organic Chemistry
Hybridization: Orbital overlap hybridization and geometry of CH_4, C_2H_4, C_2H_2 and C_6H_6. Polar effects: Inductive effect and consequences on ka and kb of organic acids and bases, electromeric, mesomeric, hyper conjugation and steric-examples and explanation.
Reaction mechanisms: Types of reactions- aromaticity-aromatic electrophilic substitution; nitration, halogenation, Friedel-Craft’s alkylation and acylation.
Heterocyclic compounds: Preparation, properties of pyrrole and pyridine.</td></tr>
</table>

	UNIT IV **15 Hours** **Drugs and Speciality Chemicals** Definition, structure and uses: Antibiotics viz., Penicillin, Chloramphenicol and Streptomycin; Anaesthetics viz., Chloroform and ether; Antipyretics viz., aspirin, paracetamol and ibuprofen; Artificial Sweeteners viz., saccharin, aspartame and cyclamate; Organic halogen compounds viz., Freon, Teflon. **UNIT V** **15 Hours** **Analytical Chemistry** Introduction to qualitative and quantitative analysis. Principles of volumetric analysis. Separation and purification techniques:extraction, distillation and crystallization. Chromatography: principle and applications of column, paper and thin layer chromatography.
Extended Professional Component (is a part of internal component only, Not to be included in the external examination question paper)	Questions related to the above topics, from various competitive examinations UPSC/ JAM /TNPSC others to be solved (To be discussed during the Tutorial hours)
Skills acquired from this course	Knowledge, Problem solving, Analytical ability, Professional Competency, Professional Communication and Transferable skills.
Recommended Text	1. Veeraiyan, V, *Textbook of Ancillary Chemistry*; High mount publishing house, Chennai, 1st Ed., 2009. 2. Vaithyanathan, S, *Text book of Ancillary Chemistry;* Priya Publications, Karur, 2006. 3. Arun Bahl, Bahl, B. S, *Advanced Organic Chemistry;* S. Chand and Company, New Delhi, 23rd Ed., 2012. 4. Soni, P. L, Chawla, H. M, *Text Book of Inorganic Chemistry*; Sultan Chand & sons, New Delhi, 29th Ed., 2007.
Reference Books	1. Soni, P.L,& Mohan Katyal, *Text book of Inorganic chemistry*; Sultan Chand and Company, New Delhi, 29th Ed., 2007. 2. Sharma, B. K, *Industrial Chemistry*; GOEL publishing house, Meerut, 16th Ed., 2014. 3. Jayashree Gosh, *Fundamental Concepts of Applied Chemistry*, Sultan & Chand, 1st Ed., 2006.

Course Learning Outcomes

On completion of the course the students should be able to

CO1: describe the theories of chemical bonding, nuclear reactions and its applications.

CO2: evaluate the efficiencies and uses of various fuels and fertilizers.

CO3: explain the type of hybridization, electronic effect and mechanism involved in the organic reactions.

CO4: demonstrate the structure and uses of antibiotics, anaesthetics, antipyretics and artificial sugars.

CO5: identify an appropriate method for the separation of chemical components

<table>
<tr><td>Title of the Course</td><td colspan="7">CHEMISTRY PRACTICAL- I

(Home Science)</td></tr>
<tr><td>Course No.</td><td colspan="7">Elective -I (GE)</td></tr>
<tr><td>Category</td><td>Generic Elective</td><td>Year</td><td>I</td><td>Credit</td><td>1</td><td>Course Code</td><td>24UHSCGECQ1</td></tr>
<tr><td></td><td></td><td>Semester</td><td>I</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Instructional hours per week</td><td>Lecture</td><td colspan="2">Tutorial</td><td colspan="2">Lab Practice</td><td colspan="2">Total</td></tr>
<tr><td></td><td>-</td><td colspan="2">-</td><td colspan="2">2</td><td colspan="2">2</td></tr>
<tr><td>Prerequisites</td><td colspan="7">Higher Secondary Chemistry</td></tr>
<tr><td>Objectives of the course</td><td colspan="7">This course aims to provide knowledge on the
● basics of preparation of solutions.
● principles and practical experience of volumetric analysis.</td></tr>
<tr><td>Course Outline</td><td colspan="7">Volumetric analysis

1. Estimation of sodium hydroxide using standard sodium carbonate.
2. Estimation of hydrochloric acid using standard oxalic acid.
3. Estimation of ferrous sulphate using standard Mohr's salt.
4. Estimation of oxalic acid using standard ferrous sulphate.
5. Estimation of potassium permanganate using standard sodium hydroxide.

6. Estimation of magnesium using EDTA.
7. Estimation of ferrous ion using diphenyl amine as indicator.</td></tr>
<tr><td>Reference Book</td><td colspan="7">Venkateswaran, V, Veerasamy, R, Kulandaivelu, A.R, Basic Principles of Practical Chemistry; Sultan Chand & sons, 2nd Ed., 199.</td></tr>
<tr><td colspan="8">Course Outcomes

On completion of the course the students should be able to

On successful completion of the course the students should be able to

CO1: gain an understanding of the use of standard flask and volumetric pipettes, burette.

CO2: design, carry out, record and interpret the results of volumetric titration.

CO3: apply their skill in the analysis of water /hardness.

CO4: analyze the chemical constituents in allied chemical products.</td></tr>
</table>

Title of the Course		FOOD PRODUCT DEVELOPMENT								
Category Non-major Elective	Year I Sem-I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
Code	24UHSSEC1	Y				2	2	30	70	100

Learning Objectives
To enable the students to :
Understand the steps involved in new food product development.
Learn about consumer preferences and market trends.
Understand concepts about subjective and objective evaluation of new product.

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UNIT	CONTENT	HOURS
UNIT I	**Introduction to New Food Product development** Food products, definition, Classification, Characterization Reasons for new food product development Factors shaping new product development-Social concerns, health concerns impact of technology and marketplace influence.	6
UNIT II	**Product Development:** a) New Product Development Team b) Sources of New Product ideas c) Designing new product d) Stages of product development e) Causes of product failure/ success in product development	6
UNIT III	**Product Evaluation and Quality Control** Quality attributes – physical, chemical, nutritional, microbial, and sensory indicators Principles and types of assessment of quality. Subjective and objective methods of evaluation of product quality. Role of sensory evaluation in consumer product acceptance; requirements for sensory analysis - Sensory panel	6
UNIT IV	**Packaging and labelling** Packaging Material-types; factors affecting type of packaging material used; Aseptic packaging, modified atmosphere packaging.	6
UNIT V	**Marketing the product** Product life cycle Costing the product and determining the sales price Advertising and test marketing the product	6
	TOTAL	30

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Define the basic concepts in food product development, packaging, costing advertising and marketing -K1.
CO2. Explain the need, characteristics and factors influencing the new product; testmarketing, packaging and quality attributes – K2.
CO3. Illustrate the quality attributes, food safety, packaging and labelling regulations,and marketing tools for a food product -K3.
CO4. Analyse the significance of packaging, labelling, advertising, costing and quality concepts for the new food product -K4.
CO5. Develop a new food product and evaluate its quality and acceptability -K6.

References:

1. Earle M., Earle RL. and Anderson A. (2001) Food Product Development: Maximizingsuccess, Woodhead Publishing Ltd, Food Series, No. 64,2001.
2. Fuller, GW (2011). New food product development: From concept to marketplace. 3rded. New York, NY: CRC Press
3. Lawless HT and Klein BP (1991) Sensory Science Theory and Applications in Foods.Marcel Dekker Inc.
4. Moskowitz HR, Saguy IS and Straus T (2009). An Integrated approach to New FoodProduct Development. ed. New York, NY: CRC Press
5. Paine FA, Paine HY (Eds.) (1992) A handbook of Food Packaging (2nd ed.), BlackieAcademic and Professional.
6. Sharma A (2018). Food product Development. CBS Publishers & Distributors Pvt Ltd

e-Learning Resources:

- https://www.destechpub.com/wp-content/uploads/2015/01/Methods-for-Developing-New-Food-Products-preview.pdf
- https://www.youtube.com/watch?v=iL0iIGpa4vg
- https://www.youtube.com/watch?v=5kOXUH8kaCs

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	2	2	2	1	3	1	2	3
CO2	3	3	3	3	2	2	3	2	2	3
CO3	3	3	3	2	2	2	3	2	2	3
CO4	3	3	3	3	2	2	3	3	2	3
CO5	3	3	3	2	2	2	3	3	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	1	3	3
CO2	3	3	3	3	3
CO3	3	3	2	3	3
CO4	3	3	3	3	3
CO5	3	3	1	3	3
Weightage	15	15	10	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	2	3	3

Strong 3 Medium 2 Low 1

Title of the Course		PERSPECTIVES OF HOME SCIENCE								
Category Foundation Course	Year I Sem-I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
Code	24UHSSEFC	Y	Y			2	2	30	70	100

Learning Objectives
To enable the students to :
Understand the concept scope and philosophy of Home Science and its components.
Learning cultural and human values through Home Science.
Understand the concept of food and nutrition and principles of Diet Therapy.
Know the trends and opportunities in Home Science.
Enable the students to gain knowledge in different areas of Home Science.

UNIT		HOURS
UNIT I	**Meaning and components of Home Science** Meaning of home science education-Philosophy of home and family, Components of Home Science, career perspectives -its a relation to other disciplines –science and humanities.	6
UNIT II	**Interior design and Resource Management and Textile and Clothing** Concepts of interior design- Importance of good taste components of an artistic interior –design, elements and principles. Resource classification, characteristics and type of goals, values and standards. Textile fibre- definition, classification natural and manmade, Yarn- definition, types of yarn. Fabric- definition, types of fabric woven knitted and non woven. Apparel- selection and care.	6
UNIT III	**Foods and nutrition and food service management and dietetics** Classifications of food according to function and food groups .Balanced diet- meaning and importance meal planning, macro and micro nutrients of food. Introduction to dietetics principles of diet therapy objectives. Classification of commercial and non- commercial food service operation.	6
UNIT IV	**Human development** Human development definition goals, Prenatal development and its stages infancy, childhood and adolescence- characteristic developmental task. Adulthood and old age- characteristics and problems.	6
UNIT V	**Home Science and Extension education** Extension education – meaning, definition, objective principles of extension education Home Science extension service at village, block and district level.	6
	TOTAL	30

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1 **:** Understand the concepts of home science and its components -K1.

CO2: **:** Identify good design, list their goals and values and understand the term textile fibre and yarn -K1.

CO3: Enlist the principles of diet therapy and functioning of food service institution -K2.

CO4: Know the key aspects human growth and development at each stages of life span -K3.

CO5: Know the role of extension education in community development -K3.

References:

1. **Manay, S. and Shadaksharaswamy, M. (1987) Foods Facts and Principles. New Age International Publishers, New Delhi**
2. **Guthrie, H.A. (1989) Introductory Nutrition. 7th ed. Times Mirror / Mosby College Publishing, St. Louis**
3. **Hurlock E.B., (1972). Child Development, New York: McGraw Hill Book company.**
4. **Srilakshmi B. (2011) Dietetics, sixth edition, New age Publishing Press, New Delhi.**
5. **Sekhri, S. (2011) Textbook of Fabric Science: Fundamentals to Finishing. India: PHI Learning Pvt. Ltd.**
6. **Nickell & Dorsey (2002), "Management in Family Living", CBS; 4th edition, ISBN-13: 978-8123908519**
7. **Pankajam, G. (2000): Extension – Third Dimension of Education, Gyan Publishing House, New Delhi.**

Learning Resources

- http://ecoursesonline.iasri.res.in/course/view.php?id=243
- https://onlinecourses.swayam2.ac.in/cec19_mg32/preview

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	2	3	2	3	3	2	3
CO2	3	3	3	2	3	2	3	3	2	3
CO3	3	3	3	2	3	3	3	3	2	3
CO4	3	3	3	2	3	3	3	3	3	3
CO5	3	3	3	2	3	2	3	3	3	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		HUMAN PHYSIOLOGY								
Category	Year-I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem -I									
Core	24UHSCC2	Y		Y		4	5	30	70	100

Learning Objectives
To enable the students to:
Gain basic understanding of human anatomy and physiology
Learn the integrated functioning of cells, tissues, organs and systems.
Apply the principles of nutrition and dietetics on the basis of thorough understanding of human physiology.

UNIT	CONTENT	HOURS
UNIT I	**Cell and tissues -** Structure of Cell and functions of different of different organelles. Classification, structure and functions of tissues. **Blood-** Constituents of blood- RBC, WBC and Platelets and its functions. Erythropoiesis, Blood clotting, Blood groups and histocompatibility **Immune system-** Antigen, Antibody, Cellular and Humoral Immunity (in brief)	15
	Practical Microscopic study of different tissues: epithelial, connective, muscular and nervous tissue Blood Experiments- Blood Smear, Blood Count and Blood Grouping	
UNIT II	**Nervous system** General anatomy of nervous system, functions of the different parts **Sense organs** Structure and functions of Eye, Ear, Skin. Physiology of Taste andSmell-in Brief,	15
	Practical Study of the Structure of Brain using model/ specimen and structure of Eye and Ear using models/charts	

UNIT III	**Heart and circulation** Anatomy of the heart and blood vessels, properties of cardiac muscle, origin and conduction of heartbeat, cardiac cycle, cardiac output, blood pressure - definition and factors affecting blood pressure, and description of ECG. **Respiratory system** Anatomy and physiology of respiratory organs. Gaseous exchange in the lungs and tissues, Mechanism of respiration.	**15**
	Practical Recording of Blood Pressure Study of the structure of Heart Lung using specimen, model/charts/ Videos	
UNIT IV	**Digestive system** Anatomy of Gastro-intestinal tract, Structure and functions of Liver and Pancreas. Digestion and absorption of carbohydrates, proteins and fats. **Excretory system** Structure of kidney, functions of Nephron	**15**
	Practical Study of the Structure of Liver, Pancreas, Stomach using model /charts /specimen/ videos	
UNIT V	**Endocrine system** Functions of hormones secreted by Pancreas, Pituitary gland, thyroid, parathyroid and adrenal glands. Effects of hypo and hypersecretion of these glands. **Reproductive system** Anatomy of male and female reproductive organs, Ovarian and Uterine cycle, influence of hormones on pregnancy and lactation.	**15**
	Practical Microscopic study of tissues of the Pituitary, Thyroid, Ovary and TestisStudy of the structure of the male and female reproductive organs using models/charts/videos	
	TOTAL	**75**

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Describe the structure and functions of a cell, various tissues, primary organs and systems in the body – K1

CO2. Explain the interrelationship between systems for maintenance of equilibrium -K2.

CO3. Evaluate the role of the nervous and endocrine system in regulating the activities of other systems -K3.

CO4. Identify the microscopic structure of basic tissues, label the parts of primary physiological systems in the body such as nervous, respiratory, digestive, endocrine and reproductive systems -K4.

CO5. Perform haematological study of blood such as blood smear, blood count and blood

grouping, record pulse, blood pressure and interpret a normal ECG -K5

Reference:

1. Beck, W.S. (1971) Human Design. Harcourt Brace Jovanovich Inc., New York.
2. Best, C. H. and Taylor, N. B. (1980) Living Body. 4th ed. BIP, Bombay.
3. Creager, J. G. (1992) Human Anatomy and Physiology. 2nd ed. WMC Brown Publishers, England.
4. Guyton, A.C. (1979) Physiology of the Human Body. 5th ed. Saunders College of Publishing,Philadelphia.
5. Subramaniam, S. Madhavan Kutty, K. (1971) The Text Book of Physiology. Orient Longman Ltd., Madras.
6. Tortora G. J.Anagnostakos N.P. (1984)Principles of Anatomy and Physiology, 4th edition, Harper and Row Publishers, New York.
7. Waugh A and Grant A. (2012) Ross and Wilson Anatomy and Physiology in Health andIllness. 11th ed. Churchill and Livingston, Elsevier
8. Wilson, K. J. W. (1987) Anatomy and Physiology in Health and Illness.6th ed.ELBS, Churchill Livingstone, London.

e- learning resources

- https://youtu.be/uFf0zxQ3rBU
- http://epgp.inflibnet.ac.in/Home/Download

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	2	2	2	1	2	2	3
CO2	3	3	3	2	2	2	1	2	2	3
CO3	3	3	3	2	2	2	1	2	2	3
CO4	3	3	3	2	2	2	1	2	2	3
CO5	3	3	3	2	2	2	1	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		PRINCIPLES OF RESOURCE MANAGEMENT								
Category Core	Year-I	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-I									
Code	24UHSCC3	Y				4	4	30	70	100

Learning Objectives
To enable students to:
Recognize and use appropriate resources to achieve one's goal.
Develop skills in utilizing the available resources in day-to-day life.
Gain knowledge about work simplification and effective management of Time, Energy and Money

UNIT	CONTENT	HOURS
UNIT I	**Introduction to Management -** Management Concepts - Definition, Concept, Micro and Macro environment. Principles of Management Process - Planning, Controlling, Evaluating. Qualities of a Good Manager. Motivational factors - Values, Goals and Standards.	12
	Activity: Identification of personal and family values and goals – their interrelationship.	
UNIT II	**Resources -** Meaning and classification, optimizing the use of family resources, Factors affecting the use of resources. **Decision making -** Meaning and its importance, Types of decisions, Decision making process, Methods of resolving conflicts.	12
	Activity: List out the resources optimizing the goal.	
UNIT III	**Time Management -** Tools in time management - Time norms, Peak loads, Work Curves and rest periods, Time management process - Planning - Steps in making time plans - Controlling the planning action - Evaluation. **Energy Management -** The efforts required in home-making activities; Energy required for household activities.	12
	Activity: Preparation of a time schedule and Evaluate time schedule using Gantt chart.	
UNIT IV	**Work Simplification -** Definition, Importance, Techniques – Formal and Informal Techniques - Mundel's Classes of change - Planning efficient work areas in kitchen. **Body Mechanics -** Posture, Gravity, Rhythmic movement, Proper use of Muscle and to take advantage of Momentum. **Fatigue -** Concepts, Types - Physiological and Psychological fatigue and Managerial process applied to energy.	12

	Activity: Study on work heights based on anthropometric measurement on vertical and horizontal planes.	
UNIT V	**Money Management -** Family Income - Types, sources and methods of augmenting family income. **Family Expenditure -** Budget - Meaning - Types of budgets, Planning a budget for a family of a fixed income, Hotel / Restaurant, advantages ofbudgeting, Factors affecting family budget, Engel's law of consumption,methods of handling money - Family financial records, Savings- importance and types.	**12**
	Activity: Preparation of family budget. Study of a saving institution andits scheme.	
	Total	**60**

COURSE OUTCOMES

After successful completion of the course the student will be able to

CO1: Apply the principles of management process in day-to-day life -K1

CO2: Identify and analyze the need for resources-K2

CO3: Utilize tools of time management effectively in day-to-day life -K3

CO4: Apply work simplification techniques while managing work -K4

CO5: Develop good decision-making skills and plan a budget within the available income and to maintain accounts-K5

References:

1. Bela Bhargava (2005), "Family resource Management & Interior Decoration", university book house pvt ltd, ISBN-13: 978-8187339229
2. Marion Giordan (2016), "Consumer Education: A handbook for Teachers", Routledge;1st edition, ISBN-13: 978-1138839151
3. Nickell & Dorsey (2002), "Management in Family Living", CBS; 4th edition, ISBN-13: 978-8123908519
4. Pushpa Chakravorty(2007), Home Management, New Delhi:Pointer Publishers.
5. Rao (2020), "Taxmann's Human Resource Management", Taxmann Publications Pvt. Ltd.; 2nd edition, ISBN-13: 978-9390128396
6. Ready GB (2021), "EBC consumer Protection Act", LAW BOOKS, ASIN:B097TQ64QV
7. Steven, D.S, (2016). Consumer Economics: A Practical Overview", NewYork: Routledge Taylor and Francis group.
8. Sudhir Dixit (2018), "Time Management", Manjul Publishing House, ISBN-13: 978-9388241106

e- Learning Resources:

- http://www.yourarticlelibrary.com/decision-making/decision-making-in-management-
- definition-and-features-explained/25657/
- http://www.familyresourcemanagement.org/services/goals/
- http://www.familyresourcemanagement.org/services/standards/
- http://www.nios.ac.in/media/documents/sechmscicour/english/home%20science%20(eng)%20ch-15.pdf
- https://books.google.co.in/books?id=NJkrzK3CgisC&pg=PA149&lpg=PA149&dq=time,+energy,+money+as+resource+in+management&source=bl&ots=xmSp-LDkia&sig=57qLKHx2UX3sznBIJhm

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	3	3	3	1	2	3	3	2
CO2	3	1	3	3	2	1	1	2	3	3
CO3	3	2	3	3	3	1	3	3	3	2
CO4	3	3	3	3	3	1	2	3	3	2
CO5	3	3	3	3	3	2	3	3	3	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low- 1

<table>
<tr><td>Title of the Course</td><td colspan="7">CHEMISTRY-II
(For Home Science)</td></tr>
<tr><td>Course No.</td><td colspan="7">Elective- II (GE)</td></tr>
<tr><td rowspan="2">Category</td><td rowspan="2">Generic Elective</td><td>Year</td><td>I</td><td rowspan="2">Credits</td><td rowspan="2">3</td><td rowspan="2">Course Code</td><td rowspan="2">24UHSCGECQ2</td></tr>
<tr><td>Semester</td><td>II</td></tr>
<tr><td rowspan="2">Instructional hours per week</td><td>Lecture</td><td>Tutorial</td><td colspan="2">Lab Practice</td><td colspan="3">Total</td></tr>
<tr><td>3</td><td>-</td><td colspan="2">-</td><td colspan="3">3</td></tr>
<tr><td>Prerequisites</td><td colspan="7">Chemistry for Biological Sciences I</td></tr>
<tr><td>Objectives of the course</td><td colspan="7">This course aims to provide knowledge on
● Nomenclature of coordination compounds and carbohydrates.
● Amino Acids and Essential elements of biosystem
● Understand the concepts of kinetics and catalysis
● Basics and types of polymers
● Provide fundamentals of photochemistry</td></tr>
<tr><td rowspan="3">Course Outline</td><td colspan="7">UNIT I 15 Hours
Co-ordination Chemistry and Water Technology
Co-ordination Chemistry: Definition of terms - IUPAC Nomenclature - Werner’s theory - EAN rule - Pauling’s theory – Postulates - Applications to $[Ni(CO)_4]$, $[Ni(CN)_4]^{2-}$,$[Co(CN)_6]^{3-}$ Chelation - Biological role of Hemoglobin and Chlorophyll (elementary idea) - Applications in qualitative and quantitative analysis.
Water Technology: Hardness of water, determination of hardness of water using EDTA method, zeolite method-Purification techniques – BOD and COD.</td></tr>
<tr><td colspan="7">UNIT II 15 Hours
Carbohydrates
Classification, preparation and properties of glucose and fructose. Discussion of open chain ring structures of glucose and fructose. Glucose-fructose interconversion. Preparation and properties of sucrose, starch and cellulose.</td></tr>
<tr><td colspan="7">UNIT III 15 Hours
Amino Acids and Essential elements of biosystem
Classification - preparation and properties of alanine, preparation of dipeptides using Bergmann method - Proteins- classification – structure - Colour reactions – Biological functions – nucleosides -nucleotides – RNA and DNA – structure. Essentials of trace metals in biological system-Na, Cu, K, Zn, Fe, Mg.</td></tr>
<tr><td></td><td colspan="7">UNIT IV 15 Hours
Polymer chemistry
Polymers - monomers, classification of polymers, types of polymerization-addition and condensation polymerization. Natural polymers: polysaccharides - (eg., starch and cellulose). Polyhydrocarbon (eg., natural rubber) and polyamide (eg., protein). Synthetic polymers: preparation and applications of polyethylene, polypropylene, polyester, polyvinylchloride, polyvinylcarbonate, polyamide, polytetrafluoroethylene, synthetic rubber, vulcanization of rubber.</td></tr>
<tr><td></td><td colspan="7">UNIT V 15 Hours
Photochemistry
Grothus - Drapper’s law and Stark-Einstein’s law of photochemical equivalence, Quantum yield - Hydrogen-chloride reaction. Phosphorescence, fluorescence, chemiluminescence and photosensitization and photosynthesis (definition with examples).</td></tr>
</table>

Extended Professional Component (is a part of internal component only, Not to be included in the external examination question paper)	Questions related to the above topics, from various competitive examinations UPSC/ JAM /TNPSC others to be solved (To be discussed during the Tutorial hours)
Skills acquired from this course	Knowledge, Problem solving, Analytical ability, Professional Competency, Professional Communication and Transferable skills.
Recommended Text	1. Veeraiyan V, *Textbook of Ancillary Chemistry*; High mount publishing house, Chennai, 1st Ed., 2009. 2. Vaithyanathan S, *Text book of Ancillary Chemistry*; Priya Publications, Karur, 2006. 3. Arun Bahl, Bahl B.S, *Advanced Organic Chemistry*; S.Chand and Company, New Delhi, 23rd Ed., 2012. 4. Soni P.L, Chawla H M, *Text Book of Organic Chemistry*; Sultan Chand & sons, New Delhi, 29th Ed., 2007. 5. Gowariker V R, Viswanathan N V, Jayadev Sreedhar, *Polymer Science*, Wiley Eastern Ltd, 1986.
Reference Books	1. Arun Bahl, Bahl B.S, *Advanced Organic Chemistry*; S.Chand and Company, New Delhi, 23rd Ed., 2012. 2. Soni P L, Chawla H M, *Text Book of Organic Chemistry*; Sultan Chand & sons, New Delhi, 29th Ed., 2007. 3. Soni P L, Mohan Katyal, *Text book of Inorganic chemistry*; Sultan Chand and Company, New Delhi, 20th Ed., 2007. 4. Puri B R, Sharma L R, Pathania M S, *Text book Physical Chemistry*; Vishal Publishing Co., New Delhi, 47th Ed., 2018. 5. Sharma B K, *Industrial Chemistry*; GOEL publishing house, Meerut, sixteenth edition, 2014.

Course Learning Outcomes (for Mapping with POs and PSOs)

On completion of the course the students should be able to

CO 1: write the IUPAC name for complex, different theories to explain the bonding in coordination compounds and water technology.

CO 2: explain the preparation and property of carbohydrate.

CO 3: enlighten the biological role of transition metals, amino acids and nucleic acids.

CO 4 : acquire knowledge about the polymer and its types .

CO 5: outline the various type of photochemical process.

<table>
<tr><td>Title of the Course</td><td colspan="7">CHEMISTRY PRACTICAL-II
(Home Science)</td></tr>
<tr><td>Course No.</td><td colspan="7">Elective-II (GE)</td></tr>
<tr><td rowspan="2">Category</td><td rowspan="2">Generic Elective</td><td>Year</td><td>I</td><td rowspan="2">Credits</td><td rowspan="2">2</td><td rowspan="2">Course Code</td><td rowspan="2">24UHSCGEQC2</td></tr>
<tr><td>Semester</td><td>II</td></tr>
<tr><td rowspan="2">Instructional hours per week</td><td>Lecture</td><td>Tutorial</td><td colspan="2">Lab Practice</td><td colspan="3">Total</td></tr>
<tr><td>-</td><td>-</td><td colspan="2">2</td><td colspan="3">2</td></tr>
<tr><td>Prerequisites</td><td colspan="7"></td></tr>
<tr><td>Objectives of the course</td><td colspan="7">This course aims to provide knowledge on
● identification of organic functional groups
● different types of organic compounds with respect to their properties.
● determination of elements in organic compounds.</td></tr>
<tr><td></td><td colspan="7">SYSTEMATIC ANALYSIS OF ORGANIC COMPOUNDS
The analysis must be carried out as follows:
(a) Functional group tests [phenol, acids (mono & di) aromatic primary amine, amides (mono & di), aldehyde and glucose].
(b) Detection of elements (N, S, Halogens).
(c) To distinguish between aliphatic and aromatic compounds.
(d) To distinguish – Saturated and unsaturated compounds.</td></tr>
<tr><td>Reference Books</td><td colspan="7">Venkateswaran V, Veerasamy R, Kulandaivelu A R, Basic Principles of Practical Chemistry; Sultan Chand & sons, 2nd Ed., 1997.</td></tr>
</table>

Course Learning Outcomes (for Mapping with POs and PSOs)
On completion of the course the students should be able to

CO1: observe the physical state, odour, colour and solubility of the given organic compound.

CO2: identify the presence of special elements and functional group in an unknown organic compound performing a systematic analysis.

CO3: analyze the given organic compound and explain the reactions behind it.

Title of the Course		INDIAN HEALTH SCIENCES								
Category SEC-NME II	Year-I Sem-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
Code	24UHSSEC2	Y				2	2	30	70	100

Learning Objectives
To enable students to:
Understanding the fundamental principles of Indian health systems such as Ayurveda and yoga which are useful in maintaining the health of a healthy person.
Practical implementation of health principles to correct the intake of our food, air, water and sunlight to achieve perfect health.
Understanding traditional way of cleansing the body regularly, strengthening body with Yogic exercises, maintaining the internal balance to prevent diseases.

UNIT	CONTENT	HOURS
UNIT I	Introduction to Ayurveda, the Knowledge of Life, Health and treatment aspects in Ayurveda, Influence of Pancha maha bhuta on Internal environment of Human being.	6
UNIT II	Understanding composition of Human body through the concept of Dosha Dhatu Mala,Understanding Prakruthi , the Mind – Body Constitution.	6
UNIT III	Establishing communication between body and mind by understandingthe language of body. Understanding the concept of Agni, Koshta, Sara and Ojas and their relevance in enhanching our immunityto protect from various infections.	6
UNIT IV	Understanding Swastha vritta, the healthy regimen to maintain stateof wellbeing Dinacharya, the Daily regimen including Daily detoxification, exercise, Intake of Food,Water, Air and Sunlight, work and ergonomics, Rest and sleep hygiene.	6
UNIT V	Definition, Meaning and objectives of Yoga, Yoga & Naturopathy; relation of Yoga and Naturopathy-various methods of treatment Naturopathy: fasting, nutrition and dietetics, hydro therapy, mud therapy, chromo therapy, magneto therapy, and massage therapy.	6
	Total	30

COURSE OUTCOMES:

After successful completion of the course, the student will be able to:

CO1- Understanding the fundamental principles of Indian health systems -K1.

CO2- Develop their understanding on health and the strategies that can be employed for improvement of physiology-K2

CO3-Gain knowledge on traditional way of cleansing the body regularly and strengthening the body-K2

CO4-Assess the health principles to correct the intake of our food to achieve perfect health -K3

CO5- Identify the internal balance to maintain and prevent diseases through yoga and naturopathy -K5.

Reference:

1. Dr Deepak Chopra, Perfect Health--Revised and Updated: The Complete Mind Body Guide, Harmony publication, 2001
2. Vasant lad, Ayurveda, the Science of Self-healing: A Practical Guide: Science of Self-healing, lotus press, 1984
3. BKS Iyengar, Light on Yoga: The Classic Guide to Yoga by the World's Foremost Authority, thronson publication, 2006
4. Swamy Satyananda Saraswati, Asana, Pranayama, Mudra and Bandha, Bihar School of Yoga,

5.Dr. H.K. Bakhru, (3006) :Diet cure for common Ailments, Mumbai,, Jaico Pub. Home. Dr. S.R. Jindal- (1994): ,Nature Cure: A Way of Life, Bangalore, Institute of Naturopathy & Yogic Sciences.

Programme Title : B.Sc. HOME SCIENCE
Course Title : BAKERY – PRACTICAL
Course Code : 24UHSSECQ3 **Hours/Week: 2**
Semester : II **Credits: 2**

Course Objectives: The course aims to

- To learn the role of various ingredients, additives and adjuncts in the preparation of bakery products
- Acquire practical knowledge and skill in the preparation of different types of biscuits, cookies, cakes and pastries.

SYLLABUS

1. Baking Principles.
2. Introduction to Bakery and Planning a Bakery Layout
3. Ingredients Used in Baking
    a. Flour b. Sugar c. Fat d. Salt e. Egg f. Leavening Agents
4. Preparation and Evaluation of Bread ,bun and Sandwich
5. Preparation and Evaluation of Cakes
    a. Sponge Cake b. Golden Cake c. Millet cake d. Brownie
6. Preparation and Evaluation of Icings
    a. Fondant Icing b. Royal Icing c. Butter Cream Icings
7. Preparation and Evaluation of Biscuits
    a. Chilly Biscuit b. Cashew Biscuit c. Pea-nut Biscuit d. Millet biscuit e. Nan-khatti
8. Preparation and Evaluation of Cookies
    a. Melting Moments b. Coconut Cookies c. Chocolate cookies
9. Preparation and Evaluation of Puff Pastry.
10. Preparation and Evaluation of Doughnut.

Reference:-

- Gali. A., 1994, New Ideas for a Great Taste, Ist edition, P.T. Bell, Publishers, Madras.
- YogambalAshokkumar, 2005, Theory of Bakery & Confectionary Ist edition, VisigaPublications, Sivagangai.

Web Resources: https://www.thekitchn.com/welcome-to-baking-school

Course outcomes (CO): On completion of the course, students should be able to

CO Number	CO Statement	Knowledge Level
CO1	Understand the basic terminology, concepts and principles of baking.	**K1**
CO2	Explain the role of various ingredients, additives and adjuncts in the preparation of bakery products.	**K2**
CO3	Identify the novel ingredients used in bakery.	**K3**
CO4	Acquire practical knowledge and skill in the preparation of different types of biscuits, cookies, cakes and pastries.	**K4**
CO5	Evaluate the quality of bakery products and create new products.	**K6**

Mapping with of COs with POs

PO / CO	Programme Outcome (POs)				
	PO1	**PO2**	**PO3**	**PO 4**	**PO5**
CO1	3	2	2	1	3
CO2	3	2	1	1	3
CO3	3	2	1	1	3
CO4	3	2	1	2	3
CO5	3	2	2	2	3

Strong-3; Medium-2; Low-1

Title of the Course		HUMAN NUTRITION								
Category Core	Year- II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-III									
Code	24UHSCC4	Y	Y			5	5	30	70	100

Learning Objectives
To enable the students to :
Understand the importance of various macronutrients in relation to health.
Highlight dietary guidelines for various nutrients and contribute towards a better lifestyle for prevention of non-communicable diseases.

UNIT	CONTENT	HOURS
UNIT I	**Introduction to Food, Nutrition and Health** Definition of Health, nutrients, Balanced diets and dietary guidelines. Signs and symptoms of adequate, optimum and good nutrition, malnutrition (Under nutrition, and over nutrition), Assessment of Nutritional status- Anthropometric, Biochemical, Clinical and Dietary aspects.	12
	Activity- Plan meals based on My- Plate concepts, Record Height, Body weight, and calculate Body Mass Index (BMI) in a small sample, and categorize according to BMI.	3
UNIT II	**Carbohydrates** Classification, Food Sources, Requirements and Functions of carbohydrates in the body. Review of digestion, absorption and metabolism. Glycemic Index, Glycemic load of Foods, and factors affecting it, Hormonal control of Blood sugar. Role of fibre in prevention of non-communicable diseases. **Proteins** Amino acids - Indispensable and dispensable amino acids. Classification, Sources, Requirements and functions of protein. Protein deficiency- Protein Energy Malnutrition - Kwashiorkor and Marasmus - etiology, clinical features, treatment and prevention Evaluation of protein quality- PER, BV, NPU and NPR, chemical score.	12
	Activity-List foods based on their GI, and Protein supplements available in the market.	3
UNIT III	**Lipids** Classification, Sources, Requirements and functions, Essential fatty acids- deficiency, food sources and functions, Healthy and Unhealthy Fats in the diets, Dietary lipids and its relation to cardiovascular diseases.	12

	Energy Determination of energy value of foods using Bomb calorimeter, Physiological value of foods. Direct and Indirect calorimetry direct calorimetry, Respiratory quotient Components of Energy expenditure- Basal metabolism, factors affecting BMR, Food related thermogenesis, Physical activity.	
	Activity-List healthy and unhealthy sources of fats in one's diet. Learn to estimate BMR.	**3**
UNIT IV	**Fat Soluble Vitamins** Food sources, Requirements, Functions, Effects of deficiency or Toxicity (wherever applicable). **Water Soluble Vitamins** Food sources, Requirements, Functions, Effects of deficiency. Antioxidantrole of certain Vitamins in Health promotion	**15**
UNIT V	**Macro minerals** Calcium, Phosphorous, Potassium, Sodium and Chloride- Distribution in the body, functions, food sources, requirements, effectsof deficiency and toxicity. **Micro/Trace minerals** Iron, Zinc, Iodine, Selenium, Fluoride and Copper Distribution in the body; functions, effects of deficiency, foodsources and requirements, Role of Antioxidant minerals **Water** As a nutrient, functions, sources, requirements. Distribution of water in the body, dehydration, water intoxication.	**15**
	TOTAL	**70**

COURSE OUTCOMES

After successful completion of the course, the student will be able to:

CO1. Define nutrients and terms related to nutrition -K1

CO2. Describe the sources, recommended allowances of macronutrients, micronutrients, and water -K2.

CO3. Interpret the significance of macro and micronutrients, and water for maintenance of optimum health -K3.

CO4. Explain the functions, deficiency or toxicity of macro and micronutrients, and water -K4.

CO5. Evaluate the role of macronutrients, micronutrients, and water in health and disease -K5.

Reference:

1. Anderson J. J. B., Root M. M., Garner S. C. (2015) Human Nutrition: Healthy Options for Life. Jones & Bartlett Learning, Massachusetts, USA.
2. Guthrie, H.A. (1989) Introductory Nutrition. 7th ed. Times Mirror / Mosby College Publishing, St. Louis
3. Insel P., Ross D., McMahon K., Bernstein M. (2016) Discovering Nutrition. 5th Ed., Jones & Bartlett Learning, Massachusetts, USA.
4. Mahan K and Sylvia E. Stump (2000) Krause's Food Nutrition and Diet Therapy,

Saunders, USA
5. Medeiros D. M., and Wildman R. E. C. (2019) Advanced Human Nutrition. 4th Ed., Jones & Bartlett Learning, Massachusetts, USA.
6. Ross A. C., Caballero B., Cousins R. J., Tucker K. L., Ziegler T. R. (2014) Modern Nutrition in Health and Disease. 11th Ed., Wolters Kluwer | Lippincott Williams & Wilkins, Philadelphia, USA.
7. Sizer F. S. and Whitney E. (2014) Nutrition: Concepts & Controversies. 13th Ed., Wadsworth, Cengage Learning, USA.
8. Whitney, E.R.andRolfes S.R. (1996)Understanding nutrition. 7th Ed., West Publishing Company, USA

e-Learning Resources:

- http://www.merck.com/mmhe/seciz/ch155/ch155a.html
- http://www.whereincity/medical/vitamins

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	2	2	2	1	1	2	3
CO2	3	3	3	2	2	2	1	1	2	3
CO3	3	3	3	3	2	2	3	2	2	3
CO4	3	3	3	2	2	2	1	2	2	3
CO5	3	3	3	3	2	2	1	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		NUTRITION PRACTICAL								
Category Core	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-III									
Code	24UHSCCQ2			Y		3	4	40	60	100

Learning Objectives
To enable the students to :
Understand the various analytical techniques.
Develop analytical skills required for nutrition research.

UNIT	CONTENT	HOURS
UNIT I	Assessment of Nutritional Status -Body Composition parameters -Circumference measurements -Clinical signs -Dietary assessment Ashing of food and preparation of ash solution	10
UNIT II	Estimation of Iron in food Estimation of calcium in food Estimation of Vitamin C by Titrimetric method	10
UNIT III	Estimation of calorific value of food using the Bomb Calorimeter-Demonstration Estimation of protein content in food by the kjeldahl method-Demonstration Estimation of moisture content of food using Infrared moisture balance-Demonstration	20
UNIT IV	Estimation of glucose in blood (colorimetric estimation and use of glucometer) Estimation of haemoglobin in blood	10
UNIT V	Determination of plasma cholesterol, Triglycerides, HDL and LDL cholesterol (with the use of the semi auto analyser) Estimation of acid value in oil/fat Visit to a food analytical lab	10
	TOTAL	60

COURSE OUTCOME

After successful completion of the course, the student will be able to:

CO1. Describe the principle and procedures for the various experiments -K1.

CO2. Identify appropriate laboratory procedures suited for estimation of select nutrients in food and body fluids -K2.

CO3. Estimate select nutrients in food and metabolites in serum -K3.

CO4. Compare the results with standard values and interpret the findings -K4.

CO5. Develop skills to assess nutritional status of individuals and the community -K5.

References:

1. Oser,D.l.(1979) Hawk's Physiological Chemistry. Tata- McGraw Hill PublishingCo.,NewDelhi
2. Plummer, D.T. (1987) Introduction to Practical Biochemistry. Tata- McGraw HillPublishing Co.,New Delhi
3. Raghuramulu,N., Nair,K.M. and Kalyanasundaram,S.(1983) A Manual of Laboratory
4. Sharma, B.K. (1999). 8thEd. Instrumental Methods of Chemical Analysis.GelPublishing House.
5. Srivastava, A.K and Jain, P.C. (1986). 2nd, Ed.Chemical Analysis: An InstrumentalApproach. S Chand and Company Ltd.
6. Techniques. NIN, Hyderabad
7. Varley, H.; Gowenlock, A.H. and Bell, M. (1980). 5thed. Practical ClinicalBiochemistry. Heinemann Medical Books Ltd.
8. Winton, A.L. and Winton, K.B. (1999). Techniques of Food Analysis. AlliedScientific

e-Learning Resources:

- http://www.merck.com/mmhe/seciz/ch155/ch155a.html
- http://www.whereincity/medical/vitamins

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	3	2	3	1	2	1	3	3
CO2	3	1	3	2	3	1	2	1	2	3
CO3	3	1	3	3	3	1	1	2	2	3
CO4	3	1	3	2	3	1	1	2	2	3
CO5	3	1	3	3	3	1	1	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of)of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		INTRODUCTION TO FASHION DESIGNING								
Category Discipline Specific Elective	Year-II Sem-III	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
Code	24UHSDSEC1	Y	Y			5	5	30	70	100

Learning Objectives
To enable the students to :
Understand the basic concepts of fashion design clothing psychology and wardrobe planning.
Acquire knowledge on design elements and colour psychology.

UNIT	CONTENT	HOURS
UNIT I	**Introduction to fashion designing** Terms related to the fashion industry – fashion, style, fad, classic, and collection, chic, Custom made, mannequin, fashion show, trend, forecasting, high fashion, fashion cycle, haute couture, fashion director, fashion editor, line, knock-off, avant-garde, bridge, buying house, apparel, fashion merchandising, pret – a – porter.	15
UNIT II	**Design** a) Design- definition and types – structural and decorative design, requirements of a good structural and decorative design. Application of structural and decorative design in a dress, selection and application of trimmings and decorations. b) Elements of design – line, shape or form, colour, size and texture. c) Principles of design- balance – formal and informal, rhythm- through repetition, radiation and gradation, emphasis, harmony and proportion. Application of principles of design in a dress.	10
	Practical 1. Application of structural and decorative design in a dress. 2. Application of elements of design in apparel. 3. Application of Principles of design in apparel.	5
UNIT III	**Colour** a) Colour- definition, colour theories- prang colour chart and Munsell colour system, b) Dimensions of colour- hue, value, and intensity. c) Colour harmonies- types and its application in dress design.	12
	Practical 1. Colour theories- prang colour chart and Munsell colour system. 2. Application of colour harmonies in apparel designing.	3

UNIT IV	**Figure drawing and analysis** a) Basic human proportions, Anatomy and model drawing 8 and 10 head theory. b) Figure analysis and designing dresses for stout figure, thin figure, slender figure, narrow shoulders, broad shoulders, round shoulders, large bust, flat chest, large hip, large abdomen, round face, large face, small face, prominent chin and jaw, prominent forehead.	**12**
	Practical - Model drawing 8 and 10 head figure	**3**
UNIT V	**Wardrobe planning** c) Wardrobe planning for different age groups, factors influencing wardrobe selection, Fashion and season, d) Designing dresses based on different occasions – business meetings, parties/ dinners, evenings/leisure hours, wedding, functions, sports, uniforms for civil service, airhostess, hoteliers, schools – girls and boys.	**15**
	Total	**75**

COURSE OUTCOME

After successful completion of the course the student will be able to:

CO1. Identify the right choice of colour, design used in apparel designing-K1
CO2. Explain the concepts related to the design and colour in apparel designing-K2
CO3. Demonstrate the methodology to be followed in effectively using the principles of design, elements of design and colour harmonies while designing a garment-K3
CO4. Identify suitable designs according to the figure of the wearer and the occasion intended-K2.
CO5. Develop skills to draw designs suitable according to the body type and plan wardrobe-K4.

Reference:

1. Sumathi, G.J. (2002) Elements of Fashion and Apparel Design. New Age International Publishers, New Delhi.
2. Gini Stephens Frings (1999) Fashion – From Concept to Consumer . 6th edition, Prentice Hall.
3. Gerry Cooklin (2003) Pattern grading for women's clothes, the technology of sizing, Black well science Ltd, USA
4. Kaur N (2010) Comdex Fashion Design: Fashion Concepts - Vol. 1, Dream tech Press, Delhi

e-learning Resources:

1. https://purushu.com/2010/08/elements-of-design-in-fashion.html
2. https://vanseodesign.com/web-design/color-meaning/
3. http://bieap.gov.in/Pdf/FGMPaperI.pdf
4. http://textilelearner.blogspot.com/2015/07/drafting-procedures-of-line-frock.html
5. http://textilelearner.blogspot.com/2015/06/drafting-procedures-of-ladies-kurti.html

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	2	2	1	1	2	2	3
CO2	3	3	3	2	2	1	1	2	2	3
CO3	3	3	3	2	2	1	1	2	2	3
CO4	3	3	3	2	2	1	1	2	2	3
CO5	3	3	3	2	2	1	1	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		CONSUMER EDUCATION								
Category SEC-IV	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-III									
Code	24UHSSEC4	Y	Y	-	-	1	1	30	70	100

Learning Objectives
To enable the students to:
Be familiar with the problems in buying and consumer legislations.
Become aware of marketing conditions and the means for problem redressal.
Create awareness on various consumer buying problems.

UNIT	CONTENT	HOURS
UNIT I	**Consumerism and consumer buying problem -** Definition and the concept of consumerism – consumer, producer and market. Characteristics of consumers, role of consumers in the Indian economy. Malpractices – Incorrect weights and measures. Misleading Advertisement and Misbranding.	3
	Activity: Preparation of poster and creating awareness on Various consumer buying problems.	2
UNIT II	**Human wants, Demand and Supply -** Definition, classification of human wants –necessities, comfort and luxuries. Meaning of demand and supply. Relation between utility, demand and supply. Factors influencing demand and supply. **Types of income -** Real, money, psychic, relationship of GNP, national income, personal income, disposable income.	3
	Activity: Preparing guidelines for purchasing commonly used consumer goods and services.	2
UNIT III	**Markets and marketing -** Basic Concept, Classification and functions of Markets, Types of Market. Channels of Distribution: Meaning,types and their advantages and disadvantages. **Consumer in the market -** Consumer buying habits, buying motives and buying problems. **Consumer Aids** a. Brand – Different types and its importance. b. Labels – Importance, Merits and demerits. Importance of Packaging and Advertising.	3
	Activity: Illustrate different types of consumer aids.	2

UNIT IV	**Quality Assessment of Products -** Definition – Standards and standardization and its Importance. Quality Seal – BIS, ISI, AGMARK, ISO, HALL MARK, BEELABEL and FPO	**3**
	Activity: Identify government agencies in protecting the consumer.	**2**
UNIT V	**Consumer decision making process -** Types of consumer decisions, process of decision making, factors determining and influencing consumer behavior, guidelines for wise buying practices. **Consumer Protective Services -** Consumer Protection Act, Food Adulteration Act – FSSAI. Quality control and inspection Act**.** Consumer Rights and consumer responsibilities.	**3**
	Activity: Identify a consumer problem and solve it using decision making steps.	**2**
	Total	**15**

COURSE OUTCOME

After successful completion of the course the student will be able to:

CO1. Identify the major influences on consumer behavior-K1.

CO2. Analyze the implications of demand and supply-K2.

CO3. Implement wise buying practices-K3.

CO4. Explain consumer protection legislations and standards -K4.

CO5. Assess the quality of a product based on the knowledge gained-K5.

References:

1. Gupta, C.B. and Nair, R.N (2004). Marketing Management: Sultan Chand and Sons,
2. Juliana, M (2011). Green consumerism, United States: SAGE Publishers.
3. Kathiresan, S. Radha, V (2004), Marketing: Chennai, Prasanna Publisher.
4. Kumar, N., (1999), Consumer Protection in India, Delhi, Himalaya Publishing House.
5. Pattanchetti, C.C. and Reddy, 2002). Principles of Marketing, Coimbatore:Rainbow Publishers, India.
6. Seetharaman, P. and Sethi, M. (2001). Consumerism: Strategies and Tactics,CBS Publishers and Distributors, New Delhi.
7. Steven, D.S, (2016). Consumer Economics: A Practical Overview",NewYork: Routledge Taylor and Francis group.
8. Suja Nair (2002). Consumer Behaviour: New Delhi. Sultan Chand and Sons.

Learning Resources:

- http://www.jagograhakjago.com/consumer-rights/
- https://consumeraffairs.nic.in/organisation-and-units/division/bureau-indian-standards
- https://www.consumer-voice.org/food/know-your-quality-marks/
- http://ecoursesonline.iasri.res.in/mod/page/view.php?id=120087

- http://ecoursesonline.iasri.res.in/mod/page/view.php?id=120086
- https://www.nios.ac.in/media/documents/srsec321newE/321-E-Lesson-17.pdf
- https://www.flexiprep.com/NIOS-Notes/Senior-Secondary/Home- Science/NIOS-Home-Family-and-Home-Science-Ch-16-Consumer- Education.html

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	3	3	3	1	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3
CO3	3	3	3	3	2	2	3	3	3	2
CO4	3	3	2	2	3	2	3	3	2	3
CO5	3	3	3	3	3	2	3	3	3	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Title of the Course		FUNDAMENTALS OF RESEARCH IN NUTRITIONAL SCIENCES								
Category SEC-V	Year-III	L	T	P	O	Credits	Inst Hrs	Marks		
	Sem-II							CIA	External	Total
Code	24UHSSEC5	Y	Y			2	2	30	70	100

Learning Objectives
To enable the students to :
Understand basic concepts of research methodology.
Use simple statistical methods for analysis of data.
Develop skills to carry out a project and present a report

UNIT	CONTENT	HOURS
UNIT I	**Introduction to research** Research- Meaning, objectives, significance. Research problem- Definition and selection of research problem. Research design –Types of research design Method of sampling - probability and non-probability sampling – Merits and Demerits Determining sample size	3
UNIT II	**Data Collection** Primary and secondary data, selection of appropriate method for data collection. Tools used for data collection- Questionnaire and Interview schedule.	3
UNIT III	**Coding and tabulation of data** Data entry and computation, Tabulation of data – parts of the table Presentation of data- use of bar graph and pie chart	3
UNIT IV	**Basic statistical tools for analysis and interpretation** Measures of central tendency – Mean, Median, Mode. Variations-the range and standard deviation Correlation –Karl Pearson's coefficient of correlation Test of significance-Student's t test	3
UNIT V	**Report writing** Steps in report writing, Layout of a report. Bibliography-citing references-any one style.	3
	EXPERIENTIAL LEARNING Carry out a small survey, code and tabulate data and present data using tables and graphs. Interpret data using simple statistical tools and present report following rules for report writing.	
	TOTAL	**30**

COURSE OUTCOMES

After successful completion of the course, the student will be able to:

CO1. Define terms associated with conduct of research -K1.

CO2. Explain research design, methods of research, collection, tabulation and presentation of data -K2.

CO3. Choose a sampling method and identify the appropriate statistical methods -K3

CO4. Analyze the data and draw conclusions -K4

CO5. Evaluate data, draw inferences and prepare a report -K5

References:

1. Goode, WJ and Hatt, PK (1981) Methods in Social Research, McGrawHill International Editions, Sociology Series.
2. Gupta, S.P. (2019) Statistical methods. 46th ed. Sultan Chand and Co, New Delhi.
3. Kerlinger F. N. and Lee, H.B. (2000) Foundations of Behavioural Research 4thEd. Harcourt College Publishers.
4. Kothari, C.R. (2019). Research methodology methods and techniques,New Age International publishers, New Delhi.
5. Kumar, R. (2005) Research Methodology: A Step-by-Step Guide for Beginners.Sage Publications, New Delhi.

e-Learning Resources:

- http://www.socialresearchmethods.net/tutorial/mugo/tutorial.htm
- https://ebooks.lpude.in/library_and_info_sciences/MLIS/year_1/DLIS401_METHODO LOGY_OF_RESEARCH_AND_STATISTICAL_TECHNIQUES.pdf
- https://mfs.mkcl.org/images/ebook/Fundamental%20of%20Research%20Methodology%20and%20Statistics%20by%20Yogesh%20Kumar%20Singh.pdf

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	3	2	2	2	3	2	2	2	3
CO2	3	3	3	3	2	3	1	3	2	3
CO3	3	3	3	3	2	2	3	3	2	3
CO4	3	3	3	3	2	2	1	2	2	3
CO5	3	3	3	3	3	3	3	2	2	3

Strong 3 Medium 2 Low 1

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Strong 3 Medium 2 Low 1

Course Title : **ENVIRONMENTAL STUDIES**

Course Code : **(24UEVSC)** **Hours/Week:2**

Semester : III & IV Course Credit:2

Course Objectives

- To educate the students regarding the environmental issues and problems.
- To give an exposure towards the scientific and socio – economic dimensionsof the environment.
- To impart and enhance the basic knowledge about environment and develop concern towards it.
- To develop the ability to evaluate the measures for the improvement andprotection of environment.
- To sensitize the students on the various environmental issues.
- To integrate different disciplines and fields that intersect with environmental concerns
- To make the younger generations aware of the values of natural resources.

UNIT I - FUNDAMENTALS

Environment-Definition: Scope, Structure and Function of Ecosystems - Producers. Consumers and Decomposers - Energy flow in the Ecosystem - Ecological Succession - Food Chain, Food Webs and Ecological Pyramids - Concept of Sustainable Development.

UNIT II - NATURAL RESOURCES

Renewable Resources - Air, Water, Soil, Land and Wildlife resources; Non-Renewable Resources - Minerals, Coal, Oil and Natural Gas; Environmental problems related to the Extraction and use of Natural Resources.

UNIT III – BIODIVERSITY

Biodiversity – Definition – values - consumption use, Productive social, Ethical, Aesthetic and option Values Threats to Biodiversity - Hotspots of Biodiversity - conservation of Biodiversity: In-situ, Ex-situ, Bio-Wealth National and Global Level.

UNIT IV- ENVIRONMENTAL POLLUTION

Definition - Causes, Effects and Mitigation Measures - Air, Water and Soil Pollution. Noise Pollution, Thermal pollution, Nuclear Hazards, Solid Wastes, Acid

Rain, Climate Change and Global Warming, Environmental Laws and Regulations in India - Earth Summit.

UNIT V- POLLUTION AND ENVIRONMENT

Population Explosion - Environment and Human Health - HIV/AIDS - Women and Child Welfare - Resettlement and rehabilitation of people, Role of Information Technology in Environmental Health. Environmental Awareness. Environmental Disaster Management - Fire Safety and Prevention.

Field work

- Visit to area to document environmental assets: river/forest/flora/fauna,etc.,
- Visit to a local polluted site - Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystem - pond, river, Delhi ridge, etc.,

(Equal to 5 lectures)

References:

1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. This Fissured land: An Ecological History of India. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4. Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339:36-37.
7. McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. -64). Zed Books.
8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.

10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L.2011. Environmental and Pollution Science. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental Law and policy in India. Tripathi 1992.
14. Sengupta, R. 2003. Ecoloy and economics: An approach to sutainable development. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics John Wiley & Sons.
17. Thapar. V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
18. Warren, C. E. 1971, Biology and Water pollution Control. WB Saunders.
19. Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
20. World Commission on Environment and Development 1987. Our common Future. Oxford University Press.,

Course Outcomes (CO):

On completion of the course, students should be able to

CO Number	CO Statement	Knowledge Level
CO1	Demonstrate critical thinking skills In Relation to environmental issues.	**K2**
CO2	Develop an integrative approach to environmental issues with a focus on sustainability.	**K3**
CO3	Bring an awareness, knowledge and appreciation of intrinsic values of ecological processes and communities.	**K1**
CO4	Reflect critically about their roles and identities ascitizens, consumers and an environmentalist in the complex, interconnected world.	**K4**
CO5	Apply systems, concepts and methodologies to analyseand understand interactions between social and environmental processes.	**K1**

K-1Recall, K-2 Understand, K-3 Apply,K-4 Analyse

Mapping of COs with POs:

PO / CO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	L	M	S
CO2	S	M	S	L	M
CO3	S	L	M	S	M
CO4	S	M	M	M	S
CO5	S	S	M	M	S

S - Strong M - Medium L - Low

Title of the Course		NUTRITION THROUGH LIFECYCLE								
Category Core	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem- IV									
Code	24UHSCC5	Y	-	Y	-	4	4	30	70	100

Learning Objectives
To enable the students to :
Understand the role of nutrition in the growth and development through the lifecycle.
Gain insight into the principles of effective meal planning.
Understand the nutritional needs of various age groups
Acquire skills to plan diets for various age groups across the lifecycle.

UNIT	CONTENT	HOURS
UNIT I	**Introduction to meal planning -** Balanced diet, food groups, Food Guide Pyramid (ICMR), Food plate, RDA, factors affecting RDA. Principles of meal planning – steps involved in planning a diet. **Nutrition for Adult** –Reference man and Reference women, nutritional requirements, planning balanced diets for adult men and women, promoting healthy lifestyle through holistic approach.	**10**
UNIT II	**Nutrition during pregnancy**- Physiological demands of pregnancy, nutritional needs, effect of nutrition on pregnancy outcome, optimal weight gain, nutrition related problems in pregnancy, complications of pregnancy. **Nutrition during lactation**- Physiology of lactation, nutritional requirements, concerns of breast-feeding mother.	**10**
UNIT III	**Nutrition during infancy**- Growth and development, growth standards, food and nutritional requirements, breast feeding, artificial feeding, low birth weight babies, complementary feeds. **Nutrition for preschool children**- Growth and development, food and nutritional requirements, eating habits and food behaviors, nutrition related problems- PEM, VAD and their dietary interventions.	**10**
UNIT IV	**Nutrition for school children**- Growth pattern, nutritional requirement, importance of healthy snacks, factors affecting eating habits, school lunch. **Nutrition during adolescence-** Growth and development, nutritional requirements, food habits, nutritional problems – obesity, underweight, anemia and eating disorders.	**10**

UNIT V	**Nutrition for old age-** Physiological changes in elderly, food and nutritional requirements, nutritional and health concerns in old age, healthy lifestyle.	**10**
	PRACTICAL 1. Preparation of Complementary feed. 2. Planning and preparation of diets for different activity levels and income group. a. Pre-school child b. School going children c. Adolescents d. Adult e. Expectant mother f. Nursing mother g. Old age 3. Planning and preparation of diets (low and medium cost) for deficiency diseases- a. PEM b. Vitamin A deficiency c. Nutritional anemia 4. Packed lunch for school	**10**
	TOTAL	**60**

COURSE OUTCOMES

After successful completion of the course the student will be able to

CO1. Explain the physiological basis for nutritional needs through the human life cycle-K2.

CO2. Identify nutrition related concerns and deficiency disorders at every stage of life cycle-K3.

CO3. Discuss appropriate dietary guidelines for various age groups-K1.

CO4. Develop indigenous, value added and low-cost complementary feeds-K4.

CO5. Demonstrate skills to plan and prepare appropriate and sustainable diets for deficiency diseases-K5.

REFERENCE BOOKS

1. Srilakshmi B. (2011) Dietetics, sixth edition, New age Publishing Press, New Delhi.
2. Gopalan,C., Ramanathan, P.V. Balasubramanian, S.C. (2001) Nutritive value of Indian foods, NIN, Hyderabad.
3. Longvah T, Ananthan R, Bhaskar K, Venkaiah K. (2017) Indian Food Composition Tables, National Institute of Nutrition.
4. Abraham S, Nutrition through Lifecycle. (2016) 1st edition, New age international publishers, New Delhi.
5. Stacy N, William's Basic Nutrition and Diet Therapy. (2005) 12th edition, Elseivier publications, United Kingdom.
6. Whitney EN and Rolfes SR, Understanding Nutrition. (2002) 9th edition

West/Wordsworth, London.

7. Groff JL, Gropper SS, Advanced Nutrition and Human Metabolism.(2000) 3rd edition, West / Wadsworth, United Kingdom.
8. Cataldo, DeBruyne and Whitney, Nutrition and Diet therapy– Principles and Practice.(1999) 5th edition, West/ Wadsworth, London.

e-LEARNING RESOURCES

- http://vikaspedia.in/health/nutrition/dietary-guidelines-1/dietary-guideline-1
- https://www.nhp.gov.in/healthlyliving/healthy-diet
- https://motherchildnutrition.org/india/complementary-feeding-guidelines.html
- http://vikaspedia.in/health/nutrition/dietary-guidelines-1/diet-for-children-and-adolescents
- https://motherchildnutrition.org/india/complementary-feeding-guidelines.html
- https://sol.du.ac.in/mod/book/view.php?id=1422&chapterid=1288

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	M	S	M	S	S
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	S	S	S	M	S	S

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Title of the Course		HUMAN DEVELOPMENT								
Category Core	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem- IV									
Code	24UHSCC6	Y	-	Y	-	4	4	30	70	100

Learning Objectives
To enable the students to :
Familiarize with the growth process from conception to confinement.
Know the development of an individual from infancy to old age.
Understand the physical, psychological, and social development of the individual from infancy to old age.
Develop an awareness of the problems of children, adolescent, and exceptional children.

UNIT	CONTENT	HOURS
UNIT I	**Growth and development** Meaning - growth and development, principles of governing growth and development, developmental task of different stages. Methods of study of human development.	10
	Practical - preparation of case study - observing various development- physical, motor, cognitive, creative, social, emotional, and intellectual of a particular child.	2
UNIT II	**Infancy and Childhood** Characteristics, physical, social, and emotional development during infancy, early childhood, and late childhood. Children's play – meaning, types, importance stages.	10
	Practical - Socio-metric study of early adolescents. Analysis of various play techniques.	2
UNIT III	**Adolescence** Adolescence –physical and psychological changes, emotional and social development, Problems of adolescence. Delinquency – causes, prevention, and rehabilitation.	10
	Practical - A survey on Juvenile Delinquency prevalence.	2

UNIT IV	Adulthood and Old Age Adulthood - Characteristics and developmental tasks, all aspects of development. Old age - Characteristics of old age, physical changes, psychological changes.	**10**
	Practical - Survey on problems of old age.	**2**
UNIT V	Exceptional Children Introduction to Children with Special Needs and identification & Educational Rehabilitation Gifted children, Mentally retarded, Hearing impaired, Visually handicapped, Orthopedically challenged	**10**
	Practical - Visit to an institution for exceptional children.	**2**
	TOTAL	**60**

CCOURSE OUTCOME

After successful completion of the course the student will be able to

CO1. Describe the meaning and principles of Growth & Development – K1.
CO2. Explain developmental aspects during infancy, early and late childhood -K2.
CO3. Evaluate developmental aspects during adolescence -K4.
CO4. Identify the developmental tasks during adulthood and old age -K3.
CO5. Introduction to Children with Special Needs and identification & Educational Rehabilitation -K3.

References

1. Hurlock E.B., (1972). Child Development, New York: McGraw Hill Book company.
2. Hurlock, E.B., (1995): Developmental Psychology - A Life Span Approach, 5th (Ed.) New York: McGraw Hill Book Co.
3. Nanda V.K., (1998): Principles of Child Development, New Delhi: Anmol Publications Pvt. Ltd.
4. Rajammal P. Devadas and Jaya N. Muthu (2002). A Textbook of Child Development, New Delhi: Macmillan Publishers.
5. Singh, A. (2015). Foundations of Human Development: A Life Span Approach. New Delhi: Orient Black Swan.
6. Suriakanthi A., (1997). Child Development – An Introduction, Tamil Nadu: Kavitha Publishers.

Title of the Course		CONCEPTS IN APPAREL DESIGNING								
Category Elective	Year-II Sem- IV	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
Code	24UHSDSEC2	Y	-	Y	-	3	3	30	70	100

Learning Objectives
To enable the students to :
Understand the essential tools used for apparel designing
Acquire knowledge on the basic construction techniques

UNIT	CONTENT	HOURS
UNIT I	**Introduction and basic hand stitches** a) Parts, functions, attachments and use and care of a Sewing machine. Minor troubles and solutions encountered while sewing. b) Tools used for clothing construction– cutting tools, measuring tools, marking tools, general tools, pressing tools. c) Basic hand stitches- temporary and permanent stitches. d) Hems – types, different stitches used.	5
UNIT II	**Basic construction techniques- seams and fullness** a) Seams and seam finishes – types, working of seams and seam finishes. b) Fullness- definition, types- darts, tucks, pleats, flares and godets, gathers and shirrs, frills or ruffles, flounces	10
UNIT III	**Basic construction techniques- Plackets and Fasteners** a) Plackets – definition, characteristics of a good placket, types – inconspicuous placket and conspicuous plackets. Method of constructing the same.	10

	b) Fasteners – conspicuous (Button and button-holes, button loops, button with holes, shank buttons, eyelets and cords). Inconspicuous (press buttons, hooks and eyes, zips).	
UNIT IV	**Basic construction techniques-sleeves and neckline** a) Sleeves – definition, types, set-in-sleeves – plain sleeve, puff sleeve, bishop sleeve, bell, circular, cap sleeve and magyar sleeve. b) Sleeve and bodice combined – raglan, kimono and dolman. c) Modified armhole – squared armhole. d) Collars – definitions, types of collars- peter pan, scalloped, puritan, sailor, square, rippled, full shirt collar, open collar, chinese, turtleneck, shawl collar e) Yokes – types, simple yoke, yoke with fullness within the yoke, yoke supporting/ releasing fullness	**10**
UNIT V	**Basic construction techniques-Pockets, Facing and Binding** a) Pockets – definition, types of pockets – patch pocket, bound pocket, pocket in a seam, front hip pocket. b) Facings – bias facing, shaped facing and decorative facing and Binding – single bias binding, double bias binding.	**10**
	Total	**45**

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Identify the right choice of sewing tools, sewing machine, hand stitches, sleeves, pockets, collars, plackets and fullness -K1

CO2. Describe the concepts related to the basic construction techniques for garment construction-K2

CO3. Demonstrate the steps to be followed in designing an apparel considering the overall appearance of the garment-K3

CO4. Explain the functions and the role of sewing machine, basic hand stitches, fullness, plackets, pockets, sleeves, yoke and collars used in apparel construction -K2

CO5. Construct garments in various styles from the knowledge gained -K4

Reference:

1. Dorothy Wood (2007) The Practical Encyclopedia Of Sewing. ai nIblioOticPl uPdiO
2. Claire B. Shaeffer (2011) Couture Sewing Techniques. Taunton Press Inc, USA
3. Matthews J (2018) Pattern Design: Fundamentals: Construction and Pattern Making for Fashion Design. Fairbanks Publishing,USA
4. Adele M (2019) The Dressmaking Book: A Simplified Guide for Beginners. Echo Point Books and Media, USA

e-learning Resources:

1. http://www.sewingsupport.com/seam-finishes.html
2. http://vintagesewing.info/1930s/33-pt/pt-02.html
3. http://www.stitchplaystudio.com/AnnouncementRetrieve.aspx?ID=521146
4. http://aces.nmsu.edu/pubs/c/C-233.html

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	M	L	L	M	M	S
CO2	S	S	S	M	M	L	L	M	M	S
CO3	S	S	S	M	M	L	L	M	M	S
CO4	S	S	S	M	M	L	L	M	M	S
CO5	S	S	S	M	M	L	L	M	M	S

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Title of the Course		BASICS OF GARMENT CONSTRUCTION -PRACTICAL								
Category Elective	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem- IV									
Code	24UHSDSECQ	Y	-	Y	-	2	2	40	60	100

Learning Objectives
To enable the students to :
Understand the essential tools used for apparel designing
Acquire knowledge on the basic construction techniques

1. Preparation of samples for Basic hand stitches (any 3)
2. Preparation of samples for Hems (any 3).
3. Preparation of samples for seam (any 3)
4. Preparation of samples for seam finishes (any 3)
5. Preparation of samples for fullness - Darts, Tucks (any 3), Pleats (any 3), Gathering by machine, elastic.
6. Preparation of samples for Plackets and - continuous, two piece and zipper plackets.
7. Preparation of samples for Fasteners - button and buttonhole, pressbutton, hook and eye.
8. Preparation of samples for Sleeves (any 2)
9. Preparation of samples with Yoke (any 2)
10. Preparation of samples for Collar (any 2)
11. Preparation of samples for Pocket (any 2)
12. Preparation of samples for Facing and Binding (any 2)

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1. Identify the right choice of sewing tools, sewing machine, hand stitches, sleeves, pockets, collars, plackets and fullness -K1

CO2. Describe the concepts related to the basic construction techniques for garment

construction - K2.

CO3. Demonstrate the steps to be followed in designing an apparel considering the overall appearance of the garment-K3.

CO4. Explain the functions and the role of sewing machine, basic hand stitches, fullness, plackets, pockets, sleeves, yoke and collars used in apparel construction-K2.

CO5. Construct garments in various styles from the knowledge gained-K4.

Reference:

1.Dorothy Wood (2007) The Practical Encyclopedia Of Sewing

2.Claire B. Shaeffer (2011) Couture Sewing Techniques. Taunton Press Inc, USA

3.Matthews J (2018) Pattern Design: Fundamentals: Construction and Pattern Making for Fashion Design. Fairbanks Publishing,USA

4.Adele M (2019) The Dressmaking Book: A Simplified Guide for Beginners. Echo Point Books and Media, USA

e-learning Resources:

5. http://www.sewingsupport.com/seam-finishes.html
6. http://vintagesewing.info/1930s/33-pt/pt-02.html
7. http://www.stitchplaystudio.com/AnnouncementRetrieve.aspx?ID=521146
8. http://aces.nmsu.edu/pubs/c/C-233.html

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	M	M	L	L	M	M	S
CO2	S	S	S	M	M	L	L	M	M	S
CO3	S	S	S	M	M	L	L	M	M	S
CO4	S	S	S	M	M	L	L	M	M	S
CO5	S	S	S	M	M	L	L	M	M	S

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Title of the Course		WOMENS HEALTH AND WELLNESS								
Category SEC	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-IV									
Code	24UHSSEC6	Y	-	-	-	2	2	30	70	100

Learning Objectives
To enable the students to:
Understand the diverse factors that has a bearing on women's health.
Highlight different aspects of health that contributes to a good lifestyle for women across the globe.

UNIT	CONTENT	HOURS
UNIT I	**Nutrition for Women -** Dietary Guidelines for a healthy lifestyle, Current concepts pertaining to Balanced Diets, Nutrient requirements for young and older women with special focus on Protein, Iron, Vitamin D and Calcium, Factors affecting nutrient intake in women- Socioeconomic, Environmental conditions, Health conditions; Consequences of Eating disorders in young women.	6
UNIT II	**Physical Health -** Significance of Body weight and Body composition parameters, Benefits of Aerobic, Flexibility and Strength training exercises- on General health, Bone health, and risks associated with NCD's.	6
UNIT III	**Reproductive Health -** Menstrual Health, Pregnancy and Lactation, Pre- and Post-Menopausal concerns-preventive measures, sexually transmitted diseases- an overview.	6
UNIT IV	**Mental Health -** Common mental health problems - Trends and issues relating to women, Depression, Anxiety and coping with Stress, Strategies to improve mental health- learning new skills and hobbies, Relaxation techniques such as yoga and meditation.	6
UNIT V	**Social Health -** Balancing home and career, strengthening relationships, enhancing communication skills and Personality Development, technological advancements and its impact, Dealing with domestic violence, and harassment issues.	6
	TOTAL	30

Activity:

- Preparation of simple healthy recipes, Planning Meals based on Balanced diets,
- Workshop on Fitness, Yoga and Meditation,

- Seminars pertaining to Reproductive Health, Communication Skills, Personality Development

COURSE OUTCOMES

After successful completion of the course, the student will be able to:

CO1. Define terms related to nutrition, physical, reproductive, mental and social health-K1.
CO2. Discuss the need for right nutrition, exercises and skills needed for the overall well-being of women-K2.
CO3. Explain the significance of maintaining physical, reproductive, mental and social health for the overall well-being of women-K3.
CO4. Devise strategies to improve women's health in a holistic manner -K3.
CO5. Recommend simple measures for a healthy lifestyle -K4.

References:

1. Lanza di Scalea T, Matthews KA, Avis NE, et al. (2012) Role stress, role reward, and mental health in a multiethnic sample of midlife women: results from the Study of Women's Health Across the Nation (SWAN). J Women's Health; 21(5):481-489.
2. Mahan K and Sylvia E. Stump (2000) Krause's Food Nutrition and Diet Therapy, Saunders, USA.
3. Minkin M. J. and Wright C. V. (2003) The Yale Guide to Women's Reproductive Health from menarche to menopause. Yale University Press, London
4. Sizer F. S. and Whitney E. (2014) Nutrition: Concepts & Controversies. 13th Ed., Wadsworth, Cengage Learning, USA.
5. Sperry L. (2016) Mental Health and Mental Disorders. ABC-Clio, California
6. Williams M.H., Anderson D.E., Rawson E.S. (2013) Nutrition for Health, Fitness and Sport. McGraw Hill, New York.
7. Wrzus C, Hänel M, Wagner J, Neyer FJ. (2013) Social network changes and life events across the life span: a meta-analysis. Psychol Bull;139(1):53-80.

e-Learning Resources:

- https://www.nhp.gov.in/social-health_pg
- https://ncert.nic.in/textbook/pdf/jehp112.pdf
- https://ncert.nic.in/textbook/pdf/iehp113.pdf
- https://ncert.nic.in/textbook/pdf/lebo104.pdf
- https://www.nih.gov/health-information/social-wellness-toolkit
- https://www.cdc.gov/reproductivehealth/womensrh/index.htm
- https://www.nimh.nih.gov/health/topics/caring-for-your-mental-health
- https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response
- https://www.cdc.gov/mentalhealth/learn/index.htm

Mapping with Programme Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	M	M	L	S	L	L	S
CO2	S	S	S	M	M	M	S	L	M	S
CO3	S	S	M	S	M	M	S	S	M	S
CO4	S	S	M	S	S	S	S	S	S	S
CO5	S	S	M	M	S	S	S	S	S	S

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	3

Title of the Course		COMPUTER APPLICATION IN HOME SCIENCE								
Category SEC	Year-II	L	T	P	O	Credits	Inst Hrs	Marks		
								CIA	External	Total
	Sem-IV									
Code	24UHSSEC7	Y	-	-	-	2	2	30	70	100

Learning Objectives
To enable the students to:
Understand the application of computer in various disciplines of Home Science.
Know the features of Auto CAD software used in Textiles & Interior Design.
Explore the benefits of computer applications in the field of research.

UNIT	CONTENT	HOURS
UNIT I	**General commands -** Creating and opening a file, Steps in creating a folder and saving a file in the destinedfolder. **MS Office Package -** Software in MS Office package, creating a document using MS Word, preparing slide presentation using MS Power Point. Making Graphs and Charts using MS office.	6
UNIT II	**Computer Application in Space planning –** Auto CAD in Interior Design **-** Need, Purpose and merits. Application – Preparing Plan, Elevation and section drawings for interiors and exteriors. Need for rendered views in design. Creating 3D models and 3D views using Google Sketchup. Advantages of software in design field.	6
UNIT III	**Computer Application in Nutrition - S**oftware package in nutrition education and diet counselling - Patient's health record, Nutritive value of food items, Nutritional analysis, Meal planning and recipes, Types of nutrition Softwares – Nutrium, Nutrition maker, Nutritionist pro, Nutritics, Core plus. Benefits of Nutrition Software's to Nutritionists and Clients.	6
UNIT IV	**Computer Application in Textiles –** Auto CAD in Textile Designing – Definition, Concept, Application of CAD – Sketching, pattern making, grading patterns, Making markers, Apparel production. Types of Textile CAD software – Woven Textiles, Knitted Fabrics, Printed fabrics, Sketch Pad system, Texture mapping, Embroidery system, Apparel industry and computer. Advantages of Textile CAD.	6
UNIT V	**Computer Application in Research -** Data collection – creating online form using Google forms, Data entry in MS Excel and data analysis using SPSS – Frequency analysis, Cross Tabulation, Chi-Sqaure, T – test, ANOVA and Correlation Co-efficient. Export and saving results in Word document. Creating Tables.	6
	Total	30

COURSE OUTCOMES

After successful completion of the course the student will be able to:

CO1: Recall the features of MS Office package -K1.

CO2: Understand the application of Auto CAD for design -K2.

CO3: Explain computer applications in the field of Nutrition - K3

CO4: Create textile design patterns using Textile CAD -K4.

CO5: Analyze research data using appropriate software and interpret results -K5.

References:

1. AutoCAD 2018 for Novices (Learn By Doing), CAD Soft Technologies.
2. CAD Practical Skills in Textile Technology and Design (TTD), Patience Chitura , 2020.
3. Microsoft Office 365 for Beginners 2022: [8 in 1] The Most Updated All-in-One Guide from Beginner to Advanced | Including Excel, Word, PowerPoint, OneNote, OneDrive, Outlook, Teams and Access, James Holler.
4. SPSS Statistics for Data Analysis and Visualization, Jesus Salcedo, Wiley Publishers, 2017.

e-Learning Resources:

- https://www.tutorialspoint.com/word/index.htm
- https://www.vmaker.com/tutorial-video-hub/microsoft-tutorial-videos/microsoft- office-tutorial/
- https://www.thesourcecad.com/autocad-tutorials/
- https://nutrium.com/blog/why-should-you-choose-a-nutrition-software- over-an-excel-word/

Mapping with Programme Outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	L	S	S	S	M	M	S
CO2	S	S	S	S	M	S	L	M	M	S
CO3	S	M	S	S	M	S	M	S	M	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	S	S	S	S	S	M	S	S	S

Mapping with Programme Specific Outcomes

CO/PSO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	2	3	3	2
CO4	3	3	3	3	2
CO5	3	3	3	3	2
Weightage	15	14	15	15	12
Weighted percentage (rounded of) of Course Contribution to Pos	3	3	3	3	2